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ABSTRACT

This is a series of five modules, each of which consists of six 3-hour classes in food preparation for nonmanagement personnel from institutional food services. Topics of the modules are breads and breakfasts, meats, vegetables and salads, extended meats and meat alternatives as sources of protein, and desserts. Included in each module are management of work, adjusting and following standardized recipes, preparing and proportioning food, the nutritional contribution of food, caring for and operating equipment, safety, sanitation, and motion economy. Also provided are guidelines for preparing and presenting the lessons and student handouts. The lessons are designed for use in a course involving lecture, demonstration, actual hands-on class activities, and audio-visuals. (MN)

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Kansas State Department of Education

Kansas State Education Building
120 East 10th Street Topeka, Kansas 66612

ED217175

KANSAS FOOD SERVICE EMPLOYEE

SHORT COURSES

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KANSAS DEPARTMENT OF VOCATIONAL EDUCATION
OCCUPATIONAL HOME ECONOMICS

FOOD SERVICE EMPLOYEE SHORT COURSES
COURSE DESCRIPTION

This is a series of five modules each consisting of six three-hour classes in food preparation for non-management personnel from institutional food services. Included in each module are management of work, adjusting and following standardized quantity recipes, preparation and portioning food, nutritional contribution of food, care and operation of equipment, safety, sanitation and motion economy. Students will taste and score the finished products against standard characteristics of high quality foods. The textbook is Food for Fifty, 6th Ed., West, Schugart and Wilson, John Wiley and Sons, 1979.

Overall goals are to:

(1) Develop basic manipulative skills related to food preparation.

(2) Develop an understanding of the basic principles of science and mathematics involved in high quality food preparation.

(3) Demonstrate high standards of cleanliness and personal hygiene.

(4) Demonstrate proficiency in artistic principles basic to food preparation.

There are no prerequisites, but some experience in quantity food production is desirable. Presentation of the course will be by lecture, demonstration, actual "hands-on" class activities, and audio-visuals. Handouts will be distributed at most sessions. Participants will become more aware of their vital and valuable role in nutritional care by providing nutritious and appealing meals to their clients as an aid to their well-being.

The five modules are:

Breads and Breakfasts

The function of ingredients, preparation of quick breads, yeast breads and breakfast menu items. Care and use of mixer, proof box and convection oven.

Meats and More

Preparation of beef, pork, fish, and poultry, using principles of moist heat cookery and dry heat cookery. Included are main dish salads and variety meats. Care and use of broiler, grill, oven, deep fat fryer, braising pan and meat thermometer.

Developed cooperatively by Occupational Home Economics,
Kansas Department of Vocational Education, Wichita Area Vocational Technical School,
and Members of the Kansas Dietetic Association.

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Vegetables and Salads with Pizzaz

Proper handling and storage of fruits and vegetables. Preparation of vegetables using a variety of cooking methods. Experiments to show effect of cooking time and acid on vegetables. Preparation of fruit salads, gelatin salads, vegetable salads, salad bars and salad dressings; garnishes. Care and use French knife, pastry tube, shredder and slicer attachments for mixer and electric chopper.

Protein Potpourri

The role of extended meats and meat alternates; preparation of soups, stocks, casseroles. Principles of cheese and egg cookery. Rice, pasta, beans and other legumes. Combining plant proteins. Assembling hot and cold sandwiches. Care and use of steam jacketed kettle, stock pots.

The Happy Ending

Fruit desserts and fruit fillings; puddings, pies, cookies, cakes and icings, cobblers, dessert specialties such as crisps, Betty, cream puffs, meringue shells. Comparison between mix cakes and those made from scratch. Use and care of scale, weighing and measuring ingredients.

* * * * * * * * * *

This new series of evening classes for non-management food service employees is being offered in Wichita at Central Vocational Building, 324 No. Emporia, this year. Students will meet in the cafeteria, 5 to 8 p.m., one evening per week for six weeks. A $12.00 fee per module covers tuition and materials. Classes are limited to 15 students.

	Date	Module
_____	September 23, 30- October 7, 14, 21, 28	Breads and Breakfasts
_____	November 11, 18, 25 - December 2, 9, 16	Meats and More (Meat Cookery)
_____	January 6, 13, 20, 27- February 3, 10	Vegetables and Salads with Pizzaz
_____	February 17, 24- March 3, 10, 17, 24	Protein Potpourri (Extended Meats & Alternates)
_____	April 1, 7, 21, 28- May 5, 12	The Happy Ending (Desserts)

Please indicate class for which you are enrolling and send to Dorothy Wise, R.D. Coordinator of Food Service Supervision, Central Vocational Building, 324 North Emporia; Wichita, Kansas 67202 Phone 268-7825.

Tuition and fees: $12.00 per module, payable to Wichita Area Vocational School.

Amount enclosed____________ Name____________________________

I am employed at________________________ Home Address____________________

Work Phone____________ Home ph.___________ ____________________________

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KANSAS DEPARTMENT OF VOCATIONAL EDUCATION
OCCUPATIONAL HOME ECONOMICS

FOOD SERVICE EMPLOYEE SHORT COURSES

COOKS

We may live without poetry, music and art
We may live without conscience and live without heart,
We may live without friends; we may live without books
But civilized man cannot live without cooks.
He may live without books; what is knowledge but grieving?
He may live without hope; what is hope but deceiving?
He may live without love; what is passion but pining?
But where is the man who can live without dining?

Owen Meredith (Sir Edward Lytton)
1831-1891

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FOOD SERVICE EMPLOYEE SHORT COURSES

SANITATION AND DRESS CODE

1. Hair nets or caps are to be worn, covering all hair.
2. A clean uniform, lab coat or large apron.
3. Enclosed, low-heeled shoes with non skid soles are to be worn with stockings, footlets or anklets.
4. Nails are to be short and clean, with no colored nail polish.
5. Avoid heavy excessive jewelry.
6. Wash hands thoroughly at hand sink before working in kitchen.
7. Utensils are to be washed according to proper ware-washing procedures.
8. Work surfaces and equipment are to be sanitized using the method recommended by instructor.
9. All food and equipment are to be handled in a safe sanitary manner.
10. Cooking spoons and spatulas are not to be used for tasting. Use a clean spoon or fork for each taste.
11. No food material is to be discarded in sinks that have no disposal units. Place refuse either in disposal or lined refuse containers.
12. Dry flour must not be scraped into any sink.

JUDGING FINISHED PRODUCTS

1. Display food product with card indicating name of product and any variation from standard procedure used.
2. Select proper score sheet for product.
3. Take small portion using proper serving utensil onto a small paper plate, and taste food with disposable spoon or fork.
4. Record your comments on score sheet. Discuss after everyone has silently evaluated product.
5. Store leftover food according to safe, sanitary food handling procedures.

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OCCUPATIONAL HOME ECONOMICS

FOOD SERVICE EMPLOYEE SHORT COURSES

GROUP DUTIES

Students will be divided into 4 groups. The following duties will be rotated within each group, so that each student will have experience in all areas.

A. PREPARATION (2 persons)
   1. Wash hands thoroughly at hand sink.
   2. Get work assignment for your group from instructor.
   3. With tray and/or cart gather equipment and ingredients.
   4. Weigh or measure all ingredients in recipe.
   5. Combine ingredients and cook according to specific directions.
   6. Clean your work area and put away unused ingredients.

B. EVALUATION
   1. Wash hands thoroughly at hand sink.
   2. Prepare market order for recipe(s) to be made in next week's class.
   3. Distribute to each class member:
      a. Standards of a Quality Product
      b. Score or evaluation sheets.
   4. Display finished products for judging and sampling.
   5. After scoring of products is completed, store left-over foods according to safe, sanitary food handling procedures. Ask instructor where left-over food is to be stored.

C. CLEAN-UP
   1. Wash hands thoroughly at hand sink.
   2. Prepare sanitizing solution of one gallon water and one tablespoon chlorine bleach in a plastic container to hold cleaning cloths.
   3. Sanitize all work surfaces with the above sanitizing solution and cloth.
   4. Prepare pot and pan sink according to the three-compartment ware washing method.
   5. Wash utensils and plastic chopping boards and put away in proper place.
   6. If used, leave range top, ovens, deep fat fryers, mixers, choppers, slicers, steam tables and other equipment turned off and clean.
   7. At end of lab period all sinks are to be cleaned and rinsed, including hand washing sinks.
   8. Put cleaning cloths in designated place.

SANITATION CHECK LIST

Work Area	Yes	No
1. Does general appearance indicate frequent cleaning of rooms and equipment?		
2. Are floors in good repair?		
3. Are floor drains clean and odorless?		
4. Are walls and ceilings clean and in good repair?		
5. Are there any overhead pipes that might leak into food or equipment?		
6. Are doors and windows effectively screened?		
7. Are mats and duckboards clean?		
8. Are food preparation areas well lighted?		
9. Are all rooms adequately ventilated and reasonably free of disagreeable odors and condensation?		
10. Are storage areas and containers cleaned frequently?		
11. Are handwashing facilities conveniently located?		
12. Is the pest control program effective?		
Food Supplies		
1. Are all foods obtained from approved sources?		
2. Are all foods protected from contamination?		
3. Are containers of food stored off the floor and on clean surfaces?		
4. Are all perishable foods kept at the proper temperature?		
5. Are potentially hazardous foods stored at 45° F. or below, or 140° F. or above?		
6. Are frozen foods kept at zero to 20° F.?		
7. Are potentially hazardous frozen foods thawed in refrigerators at 45° F. or below?		
8. Are cereals, starches, flours, sugars, and like products stored in tightly covered containers?		
9. Are containers labeled?		
10. Are products such as poisons and cleaning supplies, stored in area completely separate from food storage area?		
11. Are coats, shoes and other street clothing stored out of the kitchen?		

SANITATION CHECK LIST—Continued

Equipment and Kitchenware	Yes	No
1. Are all equipment and utensils smooth-surfaced and not readily corrodible?		
2. Are all utensils and equipment in good repair, i.e., free of breaks, open seams, cracks, and chips?		
3. Are kitchenware and equipment surfaces clean to sight and touch?		
4. Are there written cleaning procedures and schedules?		
5. Are utensils, kitchenware and equipment stored in clean, dry places at sufficient height from the floor, and protected from flies, dust and other contamination?		
6. Are proper utensils used to minimize handling foods?		
7. Are there adequate facilities for maintaining food at hot and cold temperatures?		
8. Is food held on steam or serving tables during the service period only?		
9. Are refrigerators equipped with thermometers?		
10. Is the food in refrigerators in suitable covered containers?		
11. Are wiping cloths clean and used properly?		
12. Are food carts cleaned routinely?		
Dishwashing and Pot washing		
1. Are all dishes properly scraped and, if necessary, soaked before washing?		
2. Are adequate amounts of detergent used?		
3. If dishes are machine-washed, are they washed at 140° F.–160° F. and rinsed at 180° F. and timed according to National Sanitation Foundation Standards?		
4. Is there a thermometer in each tank of the machine?		
5. In pot and pan washing sinks is there provision for maintaining rinse water at 180° F.?		
6. Is the water changed frequently enough to be clean and hot?		
7. If a chemical sanitizer is used are procedures posted and used for maintaining the sanitizing efficiency?		
8. Are dishes and pans allowed to air dry?		

SANITATION CHECK LIST—Continued

Garbage Disposal	Yes	No
1. Is garbage removed frequently?		
2. Are receptacles and liners nonabsorbent?		
3. Are receptacles covered by close-fitting lids?		
4. Are receptacles washed when emptied?		
5. Is the storage area kept clean?		
Water and Ice Supply		
1. Is the supply of hot and cold water adequate?		
2. Are hot water temperatures maintained at required temperature?		
3. Are ice and ice-handling utensils properly stored?		
4. Are ice machines properly cleaned?		
Personnel		
1. Are cleanliness and good health definite requirements for food service personnel?		
2. Is the wearing of clean uniforms, hairnets or caps required?		
3. Is adequate instruction given to personnel concerning the handling of: Food with the proper utensils? Silverware and cups? Glassware?		
4. Is the importance of frequent handwashing stressed?		
5. Are suitable hand cleaners and paper towels provided?		
6. Are dressing rooms and lockers kept clean?		

Adapted from *Food Service Manual for Health Care Institutions*, American Hospital Association.

WARE-WASHING PROCEDURE

1. Rinse and/or soak soiled utensils immediately after use.
    a. Greasy pans:
        (1) Wipe pans with paper toweling to absorb grease.
        (2) Put detergent in the pan with hot water for soaking.
    b. Sugar sirups or similar:
        Soak in hot water.
    c. Protein foods:
        (1) Soak in cold water.
        (2) Rinse egg beaters in cold tap water immediately after use.
    d. Starchy foods:
        Soak in cold water.
2. If a food scorches or burns in a cooking pan, remove pan immediately from heat:
    a. Transfer food quickly into another container.
    b. Add hot water to the scorched utensil, and place the utensil over low heat for 10-15 minutes.
3. Any large pieces of food material which have soaked free from the cooking pan should be placed in the garbage.
4. Use rubber or plastic spatula or paper toweling to remove loosened food material from utensils.
5. Use the three-compartment sink method for washing utensils. See procedure.

3 Compartment Method

Pre-rinse utensils to remove food particles so as to keep the wash water as clean as possible. Pre-soak if necessary.

Drainboard	Compartment I	Compartment II	Compartment III	Drain-Board
Stacked-Pre-Rinsed Utensils	Wash	Rinse	Sanitize	Air Dry

1. Wash is hot water (110°-120° F.) with an effective detergent in proper concentration. Water should be changed frequently, every 30 minutes of constant washing.
   ________ cup detergent (_________) in ____ gal. water in each compartment.

2. Rinse in clean clear hot water. Change water frequently.

3. Sanitize by submerging in hot water (180° F.) for 30 seconds or use a chemical as directed and approved by the State Department of Public Health. Wire baskets are essential for immersing dishes in 180° F. water. The water must be changed when cloudy.

4. Air-dry on a drainboard. Dishtowels should not be used.

5. Inspect and store on clean, dry, protected shelves.

SAFETY IS NO ACCIDENT

Accidents do not just happen; they are caused by unsafe conditions and unsafe acts which result from carelessness, lack of attention or concentration, moving too fast, or ignorance.

Every facility should have a SAFETY CONTROL PROGRAM in order to prevent or minimize accidents and injuries. Such a program consists of:

1. A commitment to safety as evidenced by established policies and procedures.
2. An organized safety committee which meets regularly to fulfill its responsibility for the safety control program.
3. Reports and investigations of all accidents.
4. Well-maintained equipment and good housekeeping practices.
5. Established safety rules and standards.
6. Specific in-service training program concerning safety.
7. Routine inspections by food service supervisor to identify unsafe conditions, followed by corrective action.

KITCHEN SAFETY

Kitchen safety practices that should always be followed:

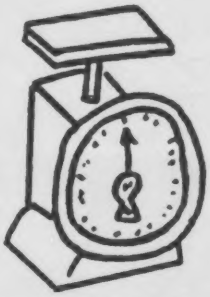
1. Wear trim dress—no dangling jewelry.
2. Provide a well-stocked first aid kit.
3. Provide stair rails where necessary.
4. Learn the proper way to lift. Do not lift very heavy objects.
5. Use proper tools for the job—i.e., can opener to open cans, not a knife.
6. Practice good housekeeping at all times. *Remember* — a place for everything and everything in place.
7. Remove boxes and packing material daily.
8. Keep trash in covered metal containers.
9. Hang up mops where air can circulate.
10. Tack down or replace loose linoleum.
11. Keep floors dry.
12. Remove spills from floor immediately.
13. Use non-slip wax.
14. Keep cupboard doors closed—or have sliding doors.
15. Keep guard covers in place over gears to grinders, etc.
16. Do not attempt repairs on moving machinery such as mixers, grinders, etc.
17. Always use wooden stomper for feeding food in grinder.
18. Keep spatulas away from revolving beaters.
19. Stop mixers before attempting to remove food.
20. Completely enclose fans and secure them.
21. Keep utensil handles tight.
22. Do not pick up broken glass with hands. Drain dish tanks to remove. Throw out broken jars, etc., immediately.
23. Do not use sharp edged coffee cans, etc., to dip soap, etc.
24. When using a knife, cut *away from you.* Knives should be stored in a knife holder, not a drawer.
25. Wash knives separately.
26. Remove covers *completely* when using can opener. A half-open can could injure someone.
27. Use a wedge type opener for cans of juice and other liquids.
28. Stand to one side of gas oven to light it.
29. Keep utensil handles away from front of stove.
30. Keep utensil handles away from burners and oven pilot.
31. Use only dry pot holders.
32. Tip lid away from you to prevent steam burn in observing item being cooked.
33. When deep fat frying, be sure pan is deep enough — do *not* fill closer than 3" to top of utensil — have food items as dry as possible.
34. Keep hoods and stoves free of grease.
35. Clean grease filters routinely as needed.
36. Keep appliance cords in good condition.
37. Do *not* have appliance cords where they can be tripped over.
38. Use dry hands when plugging in electric appliances.
39. Repair faulty switches.
40. Disconnect electric appliances when not in use.
41. Do *not* overload electrical circuits — be sure to have the proper fuses.
42. Have a good fire extinguisher handy (*not the carbon tetrachloride type*) and know how to use it. Check with the fire marshal.
43. Keep fire exits clear.
44. Do not store pot holders on stove near pilot.

FROM "FOOD SERVICE GUIDE FOR NURSING HOMES and HOMES FOR THE AGED" Michigan Department of Public Health, 1965.

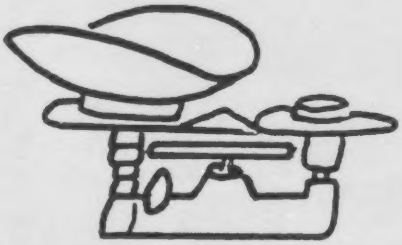
PORTION SCALES

WEIGHING AND MEASURING PROCEDURES

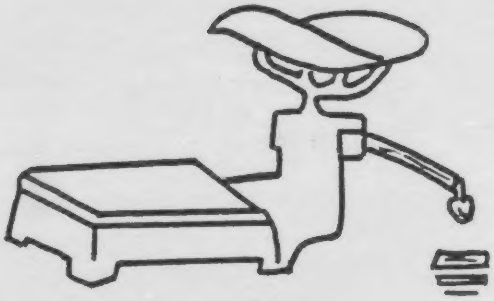
1. If possible, weigh, rather than measure ingredients other than liquid.
2. When ingredients are to be measured, use standard measuring utensils.
3. Select the measure that will enable you to do the job with the least number of operations. For example, when a quart of liquid is called for, use a quart measure instead of measuring four times in a one-cup measure.
4. To measure fractions of a cup, use individual measures of 1/4, 1/3, and 1/2 cup. Likewise, use measures of 1/4, 1/2 and 1 teaspoon and 1 tablespoon for these amounts.
5. To measure whole dried eggs, sift and lift lightly into measure. Level off top.
6. To measure nonfat dry milk, first stir with spoon, then lift lightly into the measure and level off top with edge of spatula.
7. Sometimes it is possible to obtain the desired amount of such foods as butter or packaged cheese by cutting off a half or a fourth of the block.
8. Portion scale used for:
    1. Sliced meats
    2. Cheese
    3. Belogna



PORTION SCALE



BAKER'S SCALE



COUNTER SCALE

Reproduced from: A CURRICULUM GUIDE FOR IN-SERVICE EDUCATION OF SCHOOL FOOD SERVICE PERSONNEL, Minnesota State Department of Education, August, 1978.

INFORMATION INCLUDED IN A STANDARDIZED RECIPE

1. Appropriate title for recipe.
2. Yield of the recipe--in number of servings and/or volume or weight of mixture.
3. Size of such servings--in volume, weight, or size of piece.
4. The amount of Meat/Meat Alternate and/or fruit or vegetable which each serving provides toward meeting the Type A lunch requirement.
5. Size of pan used, especially for baked or congealed items and if pan size is of particular importance to the quality of the finished product or to the way in which the product is portioned or both. Example: for Biscuits no pan size is given. However, for a recipe such as "Jellied Cottage Cheese and Vegetable Salad" the number of pans to use as well as size of pans are given because this information is essential to obtaining the size serving specified.
6. Ingredients listed in the order used.
7. Type or form of ingredients to use is clearly specified, such as all-purpose flour, melted fat, chopped onions, etc.
8. Quantity of each ingredients given in both weight and volume.
9. Clear, precise, instructions for the method of preparing and combining the ingredients.
10. Clear, precise instructions for cooking method, time and temperature.
11. Clear, precise instructions for size or portion and for method of service if the item prepared requires this additional informatinn.

Adapted from: A CURRICULUM GUIDE FOR IN-SERVICE EDUCATION OF SCHOOL FOOD SERVICE PERSONNEL, Minnesota State Department of Education, August, 1978.

RECIPE:

YIELD:

TIME:

NUMBER OF PORTIONS:

TEMPERATURE:

SIZE OF PORTION:

INGREDIENTS	AMOUNT			METHOD

GENERAL RULES TO FOLLOW TO GET THE BEST RESULTS FROM RECIPES

I. Read recipe to be used a day in advance.

  A. Check to see if any advance preparation is required.

  B. Check to see that all ingredients are on hand.

  C. Check to see that all equipment called for is available

II. Study recipe carefully.

  A. Note number of portions recipe will give or yield in weight or volume.

  B. Note size or portion.

  C. Adjust amounts for the number of portions needed and the desired size of portion. For example: Cold Slaw yields 100 - ½ cup portions or 200 - ¼ cup portions.

  D. Check ingredients to see if any need preparation before weighing or measuring and, if necessary, figure amounts needed.

  E. Be sure meaning of abbreviations is understood.

  F. Read directions carefully.

III. Put recipe card in some kind of protective cover.

IV. Assemble ingredients and equipment. Use tray or cart.

V. Use exact amounts called for. Weigh or measure accurately.

VI. Follow directions exactly.

VII. Make pertinent comments on recipe card after it is used. Check and comment on size of servings, etc.

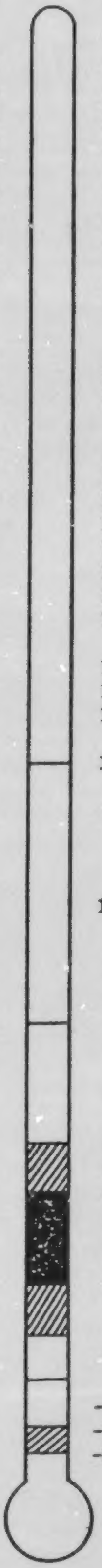
VIII. When dried eggs or nonfat dry milk are used in recipes calling for fresh eggs and milk, make adjustments in recipe and note on card.

IX. When substitutions are necessary, use correct equivalents.

Reproduced from: A CURRICULUM GUIDE FOR IN-SERVICE EDUCATION OF SCHOOL FOOD SERVICE PERSONNEL, Minnesota State Department of Education, August, 1978.

Reproduced from: Morr, Mary L., and Irmiter, Theodore F., Introductory Foods A Laboratory Manual, U.S.A.: Macmillan Publishing Co., Inc., 1980, p. 12. 3rd ed.

TEMPERATURES USED IN FOOD PREPARATION



	(Degrees Fahrenheit) °F	°C (Degrees Celsius)	
Oven Temperatures:			
Extremely hot oven	525	274	
	500	260	
Very hot oven	475	246	
	450	232	
Hot oven	425	218	(Muffins, biscuits, pie pastry)
	400	205	
Moderate ovens	375	190	(Angel and sponge cakes, custards and souffles—set in pan of water; macaroni and cheese—all 350° F.)
	350	176	
Slow oven	325	163	
	300	149	(Roasting large roasts of meat, roasting poultry—325° F.)
Deep-fat Frying:	395	201	(French fried potatoes)
	375	190	(Croquettes, onions, eggplant)
	350	177	(Chicken, fish, fritters)
Sugar Cookery:	338	170	(Carmelization of sugar)
	320	160	(Granulated sugar liquifies)
	310	154	(Hard crack—Peanut Brittle)
	290	143	(Soft crack—Taffy, Butterscotch)
	266	130	(Hard ball—Divinity, Marshmallows)
	248	120	(Firm ball—Caramels)
	239	115	(Soft ball—Fudge, Penuchi)
	234	112	(Very soft ball—Fondant)
Steam Pressure:	250	121	(15 lbs. pressure at sea level)
	240	115	(10 lbs. pressure at sea level)
	228	109	(5 lbs. pressure at sea level)
Water Temperatures:			
Boiling water	212	100	(0 lbs. pressure at sea level)
Simmering range	210	99	(Bubbles vigorously break on surface)
	185	85	
Scalding	149	65	
Lukewarm	104	40	
Changes in Foods:	214	101	(Coagulation of protein in baked products of low sugar content)
	208	98	(Steep beverages: tea, coffee)
	203	95	(Maximum gelatinization of starch)
Temperature Effect on Bacterial Growth/Survival:	170	77	(End temp. in cooking pork to kill trichinae; well-done beef)
	165	74	
165-140°F (74-60°C) Prevents growth; allows survival.	160	70	(Medium beef; egg yolk and whole egg coagulate)
140-120°F (60-49°C) Some growth occurs; many bacteria survive.	149	65	(Complete coagulation egg white; starch begins to gelatinize)
	140	60	(Rare beef)
120-60°F (49-15°C) Danger Zone:	125	52	(Coagulation of egg white begins)
1) Bacteria grow rapidly.	120	49	
2) Toxins produced by some bacteria.	115	46	(Maximum for rehydration of dry yeast)
	104	40	(Optimum activity of rennin enzyme)
60-40°F (15-4°C) Some bacterial groth occurs.	90	33	(Optimum for yeast fermentation)
	60	15	
40-32°F (4-0°C) Slow growth of bacteria causing food spoilage.	45	7	(Maximum temp. for refrigeration)
	40	5	
32-0°F (0° to -18°C) Some bacteria survive freezing. No growth at low temp.	35	2	(Optimum temp. for refrigeration)
	32	0	(Freezing temp. of water)
	29	- 1.7	(Cold storage of eggs in shell)
140-40°F (60-4°C) Critical temp. range for food poisoning bacteria.	0	-17.8	(Range for freezer storage of foods)
	-10	-23.3	

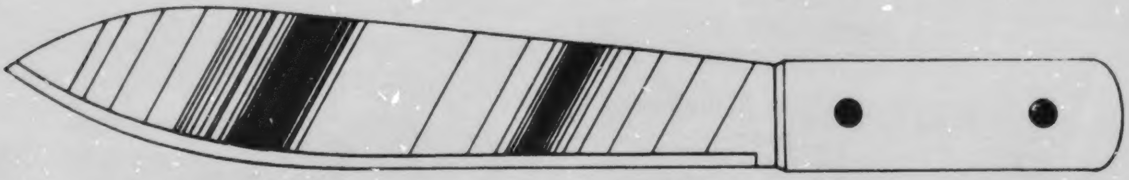
HAND TOOLS AND UTENSILS
UNIT II

INFORMATION SHEET

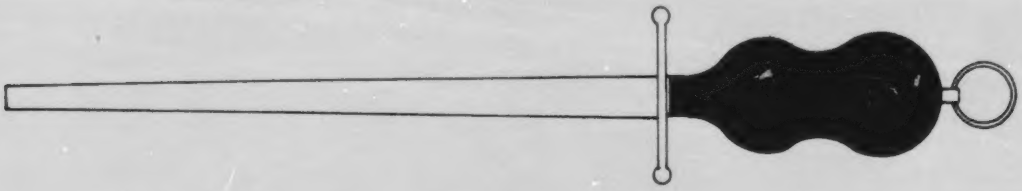
I. Cutting tools

A. Boning knife - To bone meat

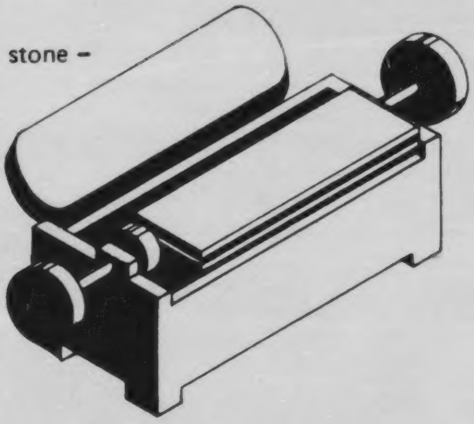
B. Butcher knife - To cut steaks



C. Butcher steel - To maintain the edge of a knife

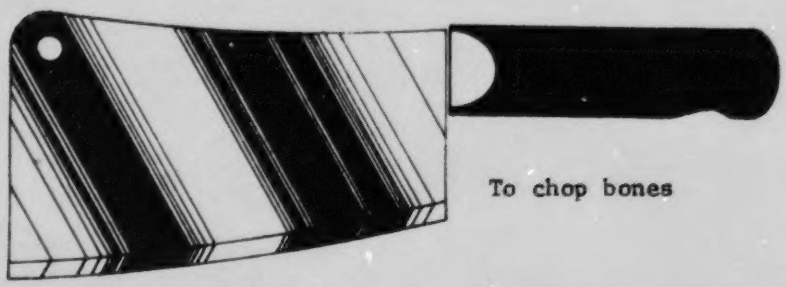


D. Hand stone - To maintain the edge of a knife



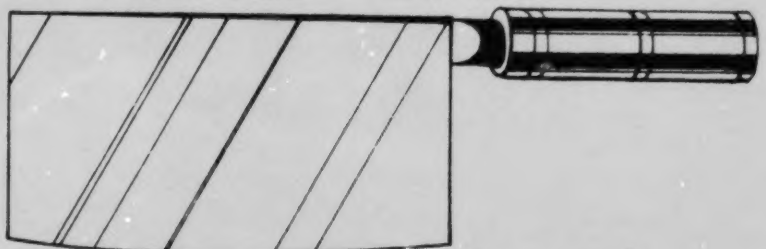
INFORMATION SHEET

E. Cleaver

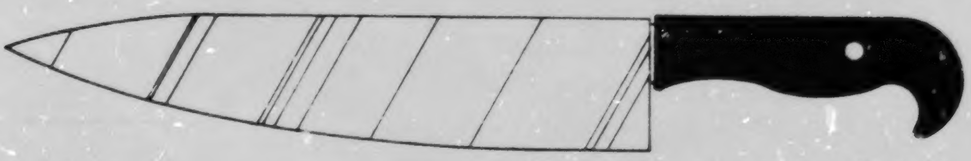


To chop bones

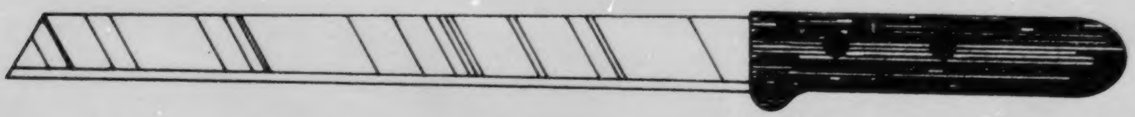
F. Chinese butcher cleaver - To chop bones



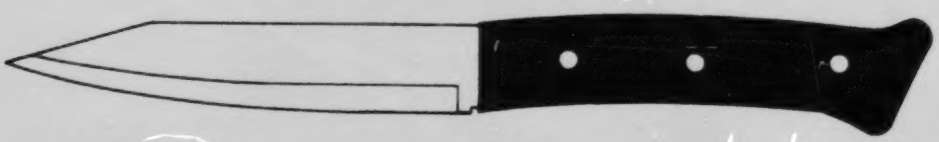
G. French knife - To slice, chop, mince, and dice



H. Ham slicer - To slice ham

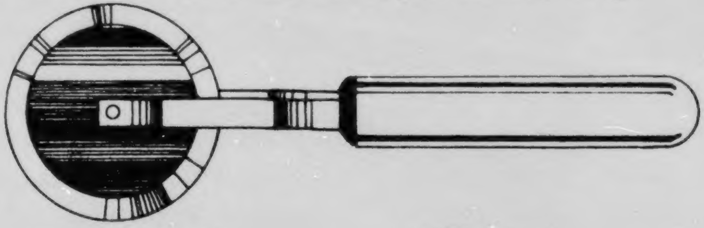


I. Paring knife - To pare fruits and vegetables

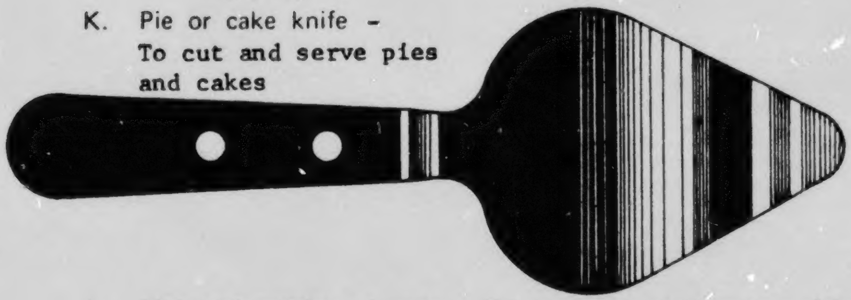


INFORMATION SHEET

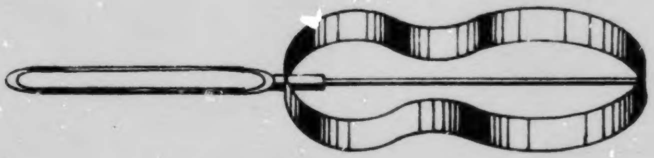
J. Pastry wheel - **To cut all types of flat dough**



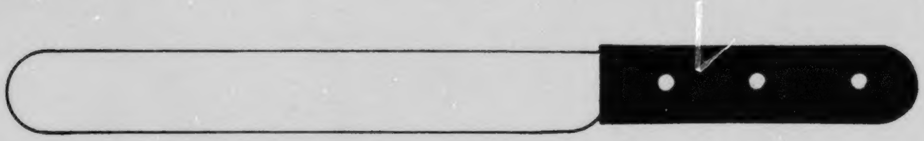
K. Pie or cake knife -
To cut and serve pies and cakes



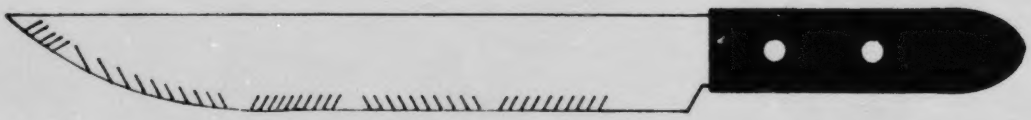
L. Vegetable peeler or parer - **To peel or pare outer skin of fruits and vegetables**



M. Roast beef slicer - **To slice roast beef**

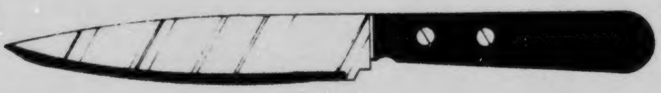


N. Bread knife - **To slice bread**

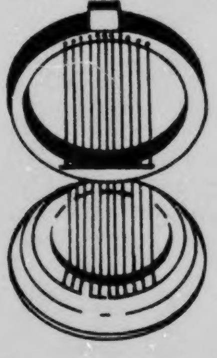


INFORMATION SHEET

O. Utility knife - To cut small foods

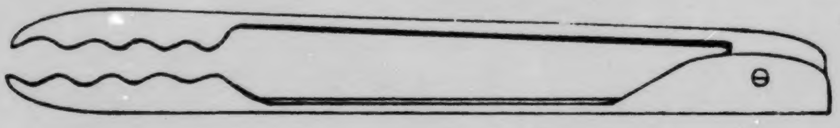


P. Egg slicer - To slice eggs uniformly

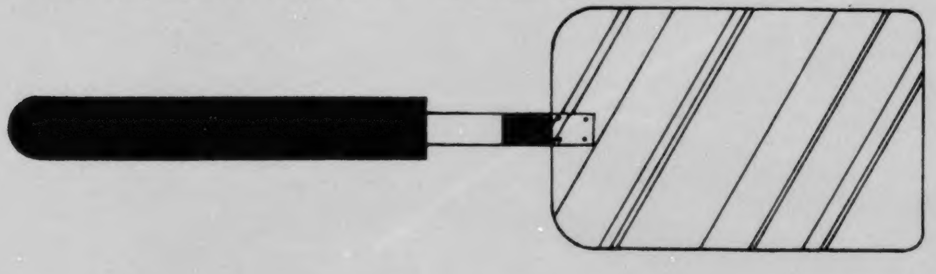


II. Handling tools

A. Food tongs - To pick up and serve foods

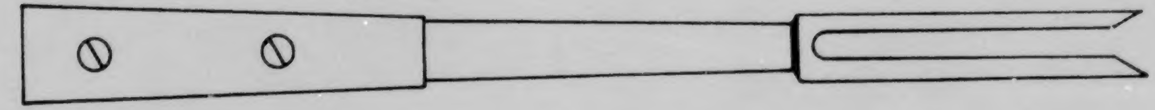


B. Hot cake or meat turner - To turn foods



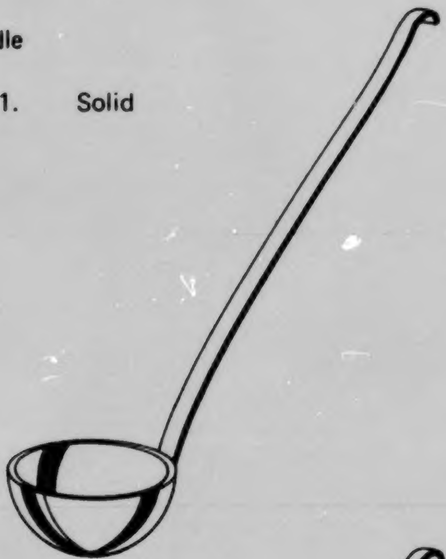
INFORMATION SHEET

C. Kitchen fork - To hold meat while slicing or turning

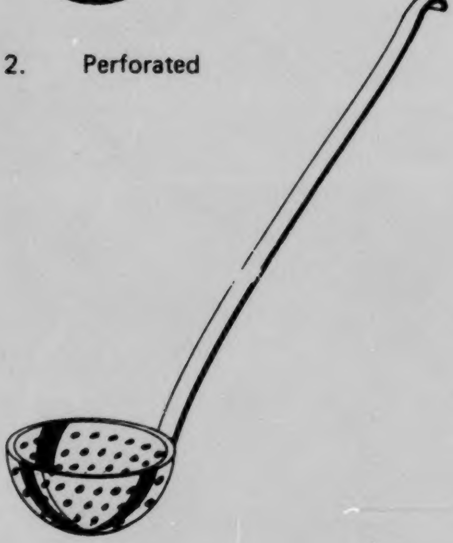


D. Ladle

1. Solid



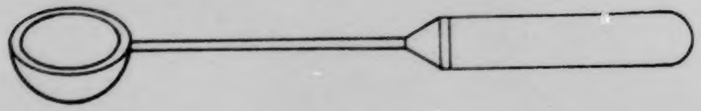
2. Perforated



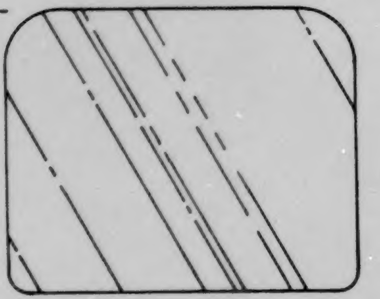
1. To stir and mix before serving
2. To dip
   a. Available in portion sizes
   b. Used for measuring

INFORMATION SHEET

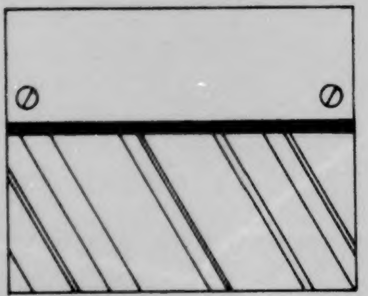
E. Melon ball - To cut fruits and vegetables into small balls



F. Plastic scraper - To scrape down bowls

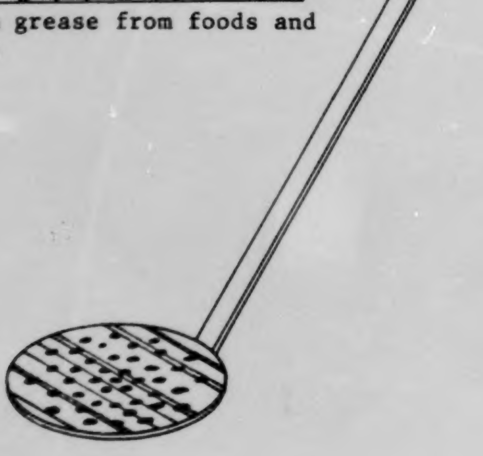


G. Dough cutter -



1. To scrape meat blocks and cutting boards
2. To cut dough

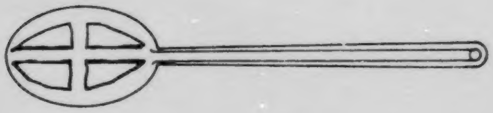
H. Skimmer - To skim grease from foods and liquids



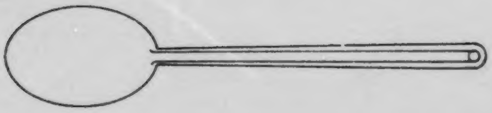
INFORMATION SHEET

I. Kitchen spoon

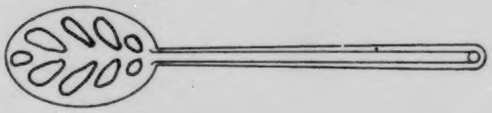
1. Slotted - To serve large vegetables



2. Solid - To fold, stir, and serve

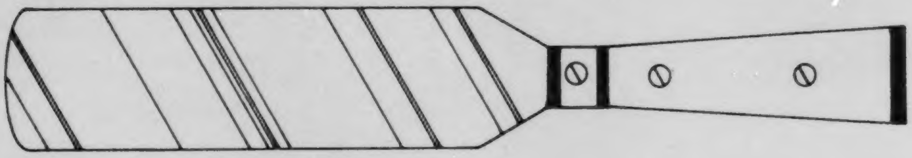


3. Pierced - To serve small cut vegetables



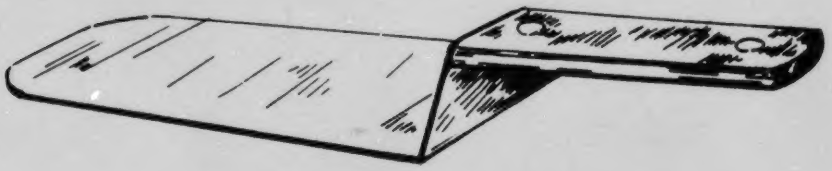
J. Spatula

1. Flat - To ice cakes

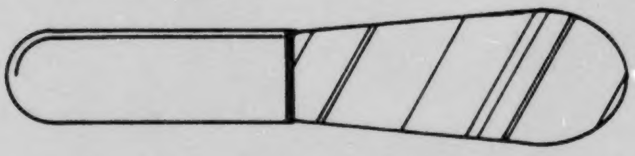


INFORMATION SHEET

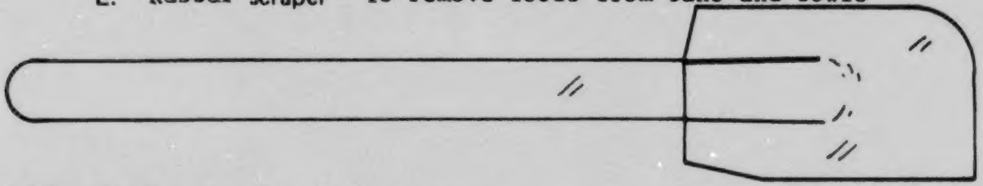
2. Offset - To mix, spread, and scrape



K. Sandwich spreader - To spread filling or dressing on bread

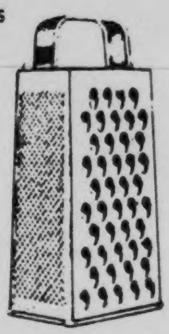


L. Rubber scraper - To remove foods from cans and bowls

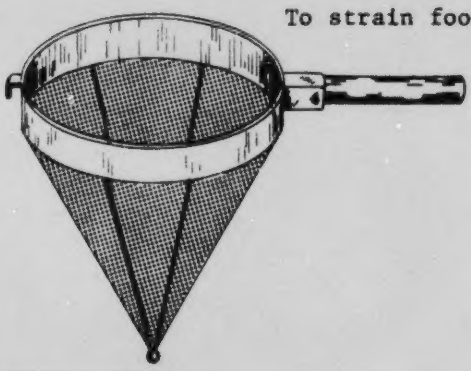


III. Food preparation tools

A. Box grater - To grate or shred food into small pieces

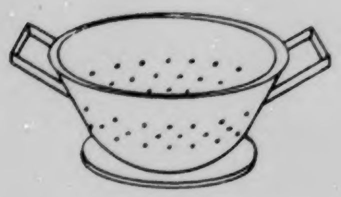


B. China cap - To strain foods or liquids

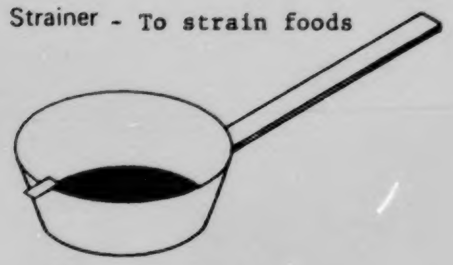


INFORMATION SHEET

C. Colander - To strain liquids from foods

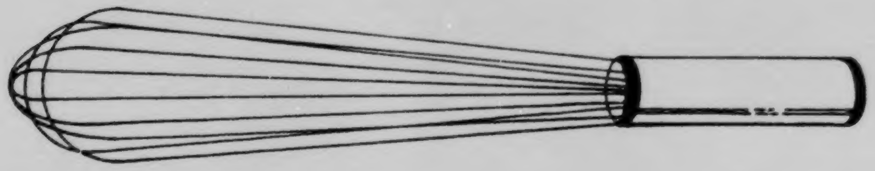


D. Strainer - To strain foods

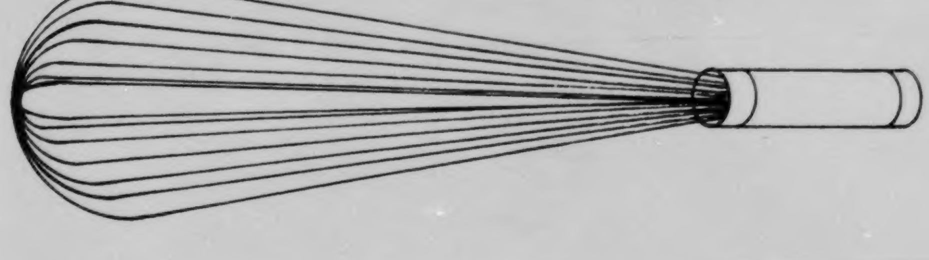


E. Wire whip

1. French - To whip foods (NOTE: This whip is made of rigid wire.)

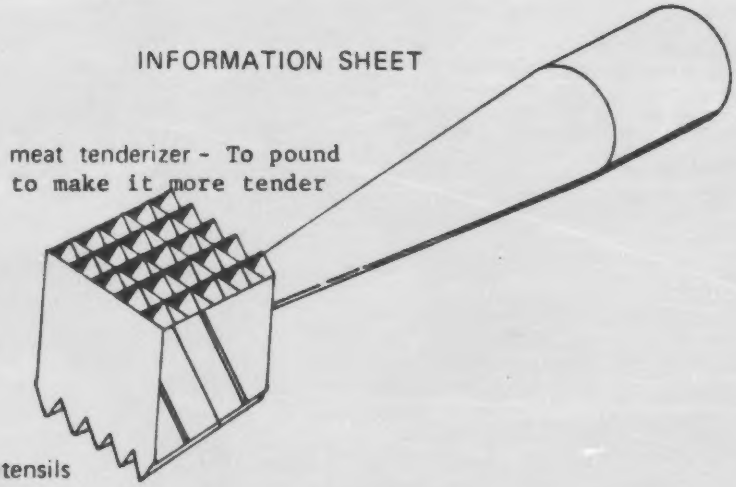


2. Piano - To whip foods (NOTE: This whip is made of flexible wire.)



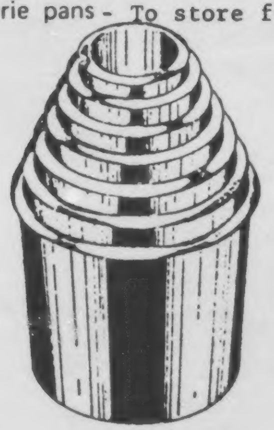
INFORMATION SHEET

F. Hand meat tenderizer - To pound meat to make it more tender



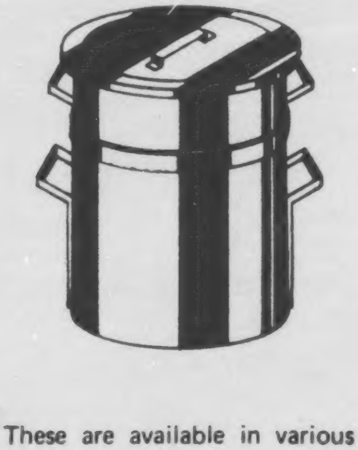
IV. Cooking utensils

A. Bain-marie pans - To store foods



(NOTE: These are available in various sizes.)

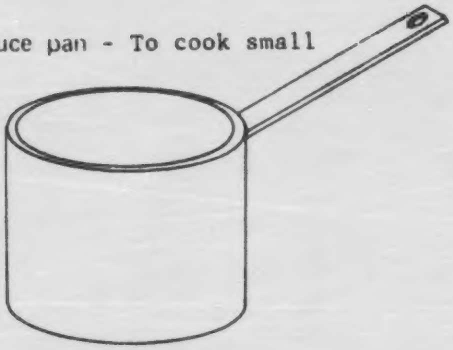
B. Double boiler - To cook foods that scorch easily



(NOTE: These are available in various sizes.)

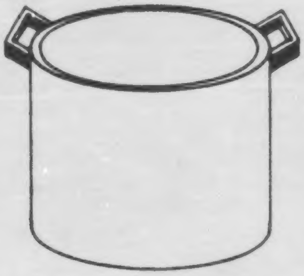
INFORMATION SHEET

C. Sauce pan - To cook small amounts of food on top of range



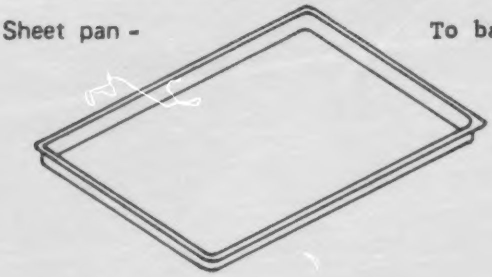
(NOTE: These are available in various sizes.)

D. Sauce pot - To cook food on top of range



(NOTE: These are available in various sizes.)

E. Sheet pan - To bake foods

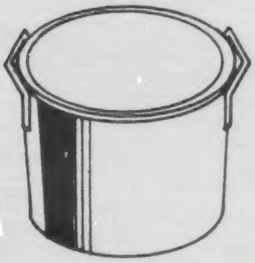


(NOTE: These are available in various sizes.)

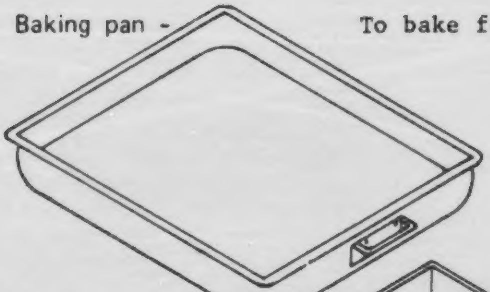
F. Skewer - To hold food together during cooking

INFORMATION SHEET

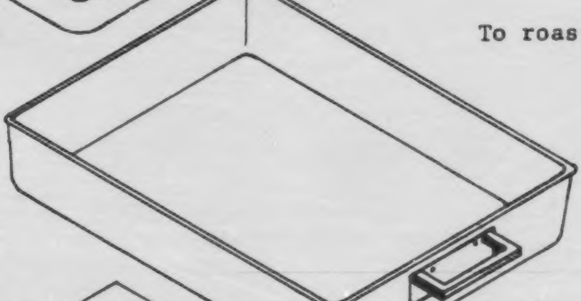
G. Stock pot - To cook large quantities of food on top of range



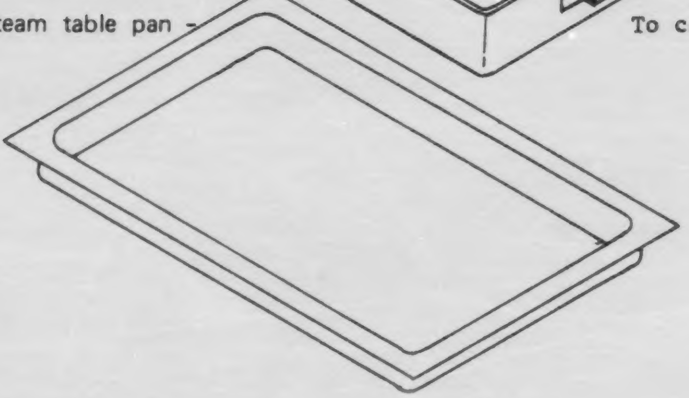
H. Baking pan - To bake foods



I. Roasting pan - To roast meats

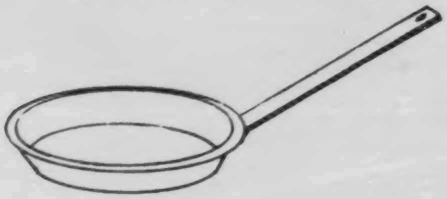


J. Steam table pan - To cook and serve

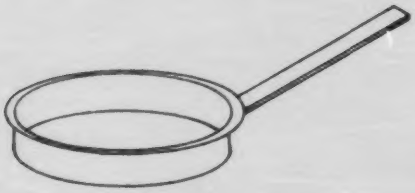


INFORMATION SHEET

K. Egg skillet - To cook eggs

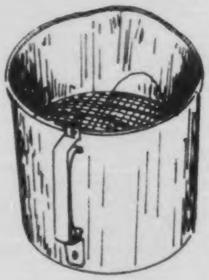


L. Sauté pan - To saute foods

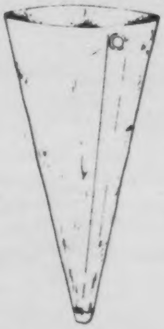


V. Baking utensils

A. Flour sifter - To sift flour and sugar



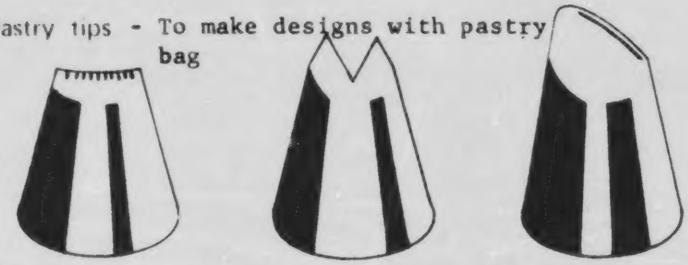
B. Pastry bag - To hold icing during decorating



(NOTE: These are available in various sizes.)

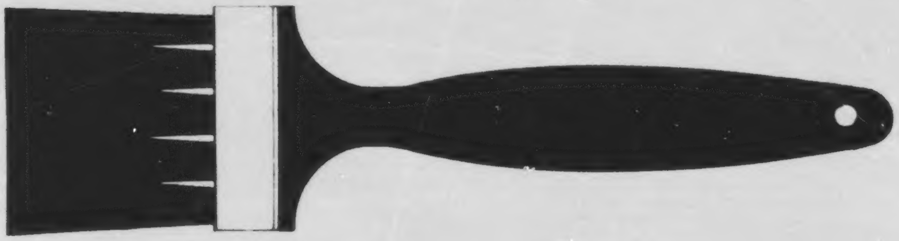
INFORMATION SHEET

C. Pastry tips - To make designs with pastry bag



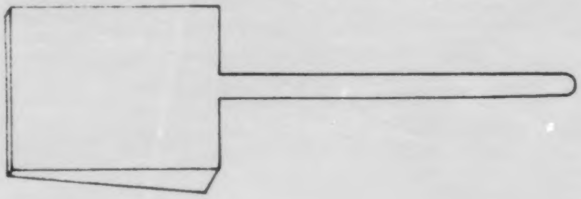
(NOTE: These are available in various sizes.)

D. Pastry brush - to brush on liquids

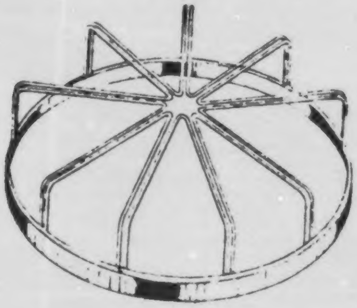


(NOTE: These are available in various sizes.)

E. Peel - To place and remove pizza from oven



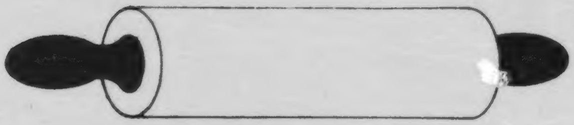
F. Pie or cake marker - To mark pie or cake for portion control



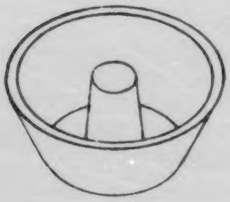
(NOTE: These are available in various sizes.)

INFORMATION SHEET

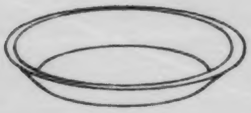
G. Rolling pin - To roll dough to desired thickness



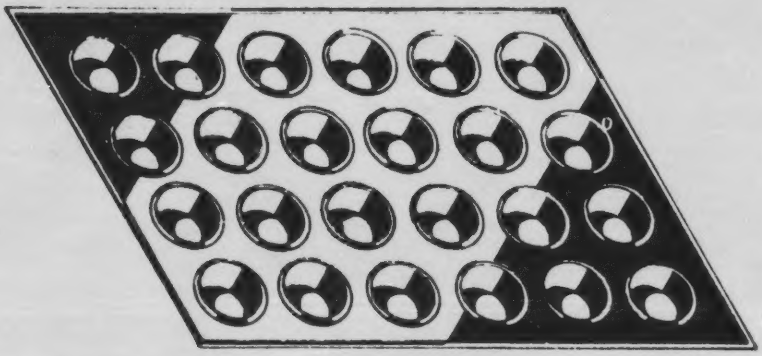
H. Tube cake pan - To cook tube cakes



I. Pie pan - To cook pies or pie crusts



J. Muffin tin - To cook muffins

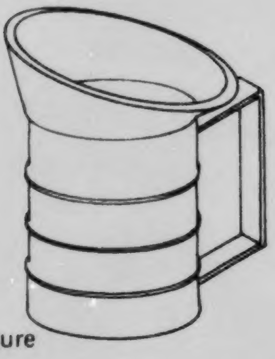


INFORMATION SHEET

VI. Measuring devices

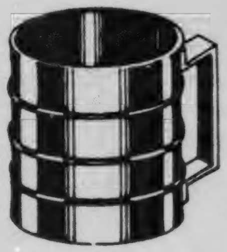
A. Liquid measure

1. Cup
2. Pint
3. Quart
4. Gallon

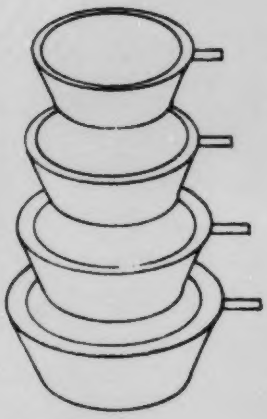


B. Dry measure

1. One to four cups

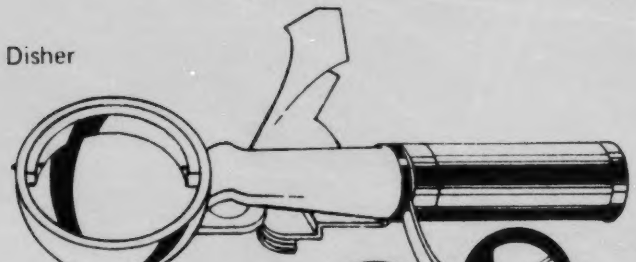


2. 1, 1/2, 1/3, 1/4 cup

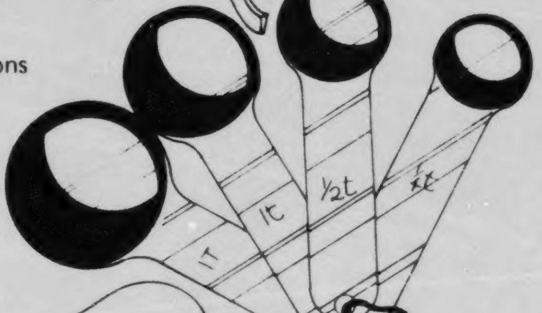


INFORMATION SHEET

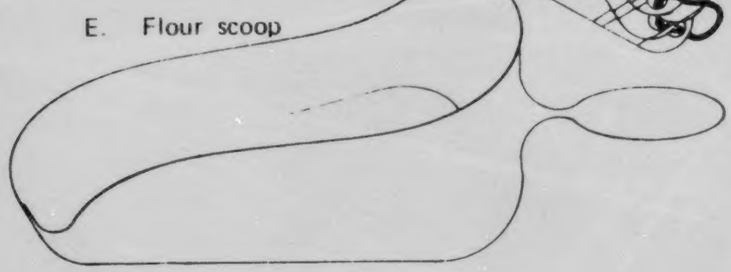
C. Disher



D. Measuring spoons



E. Flour scoop



FOOD SERVICE EMPLOYEE SHORT COURSE

Module I- Breads and Breakfasts

LESSON ONE: INGREDIENTS

GOALS: The purpose of this lesson is to:

1. Introduce the participants to the physical plant of the kitchen and work area. Allow participants to be introduced.
2. Give the participant a preview of each of the six lessons in the Breads and Breakfasts Module.
3. Have the participant gain understanding of the properties of ingredients used in breads, and how these ingredients react when combined.
4. Teach the participant to use the correct procedures to measure and weigh food ingredients.

BEHAVIORAL OBJECTIVES: After completing this lesson, the participant should be able to:

1. State where equipment and utensils are stored.
2. Demonstrate sanitary methods of washing and storing equipment and utensils.
3. Demonstrate sanitary methods of cleaning work surfaces.
4. Demonstrate ability to light oven.
5. Clarify with the instructor, through discussion and questions, what will be presented in each of the lessons in this module.
6. State one property of each of the following ingredients: soft flour, hard flour, shortening, sugar, leavening agents, eggs, flavorings, and spices.
7. Demonstrate how to develop the gluten in flour.
8. Recognize the correct measuring and weighing techniques used in quantity food production.

ASSIGNMENTS:

LESSON TWO: QUICK BREADS

GOALS: The purpose of this lesson is for each participant to develop.

1. Knowledge and skill in the preparation of quick breads and the
2. Ability to evaluate a good quick bread product.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Demonstrate the ability to prepare baking powder biscuits, muffins and date-nut bread loaves.
2. Describe a standard baking powder biscuit.
3. Describe a standard muffin.
4. Describe a standard quick bread loaf.
5. Evaluate a baking powder biscuit.
6. Evaluate a muffin, and evaluate a loaf of quick bread.

LESSON THREE: YEAST BREADS

GOALS: The purpose of this lesson is to:

1. Give the participants the opportunity to prepare and evaluate products leavened with yeast.
2. Enable the student to utilize the principles of yeast bread preparation in quantity cookery.
3. Allow participants to prepare and compare the quality of dinner rolls from a straight dough mixing method and a quick dough products method.
4. Enable each participant to develop and practice the skills that are necessary to produce standard sweet dough products in quantity batches.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Demonstrate the ability to make quantity adjustment of a standard recipe.
2. Discuss a minimum of five principles of yeast bread preparation.
3. Describe the three most common mixing methods for preparing yeast breads.
4. Define and give examples of products made from: "lean dough" and "sweet dough".
5. List and describe each of the 10 production stages in the preparation of yeast breads.
6. Describe a standard dinner roll.
7. Discuss standards for yeast products made from sweet dough. Demonstrate shaping techniques for the following shapes:
    - Knots
    - Rosettas
    - Butterflies
    - Lucky Clovers
    - Crescents
    - Fan Tans
8. Prepare and evaluate dinner rolls using techniques appropriate for quantity cookery.

ASSIGNMENTS:

LESSON FOUR: BREAKFAST EGGS AND MEATS

GOALS: The purpose of this lesson is to develop breakfast egg and meat cooking skills and to acquaint participants with textured vegetable protein breakfast products.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Demonstrate cooking skills needed to prepare and cook quality breakfast eggs and meats.
2. Demonstrate ability to recognize and describe standard quality breakfast egg products and breakfast meats.
3. Discuss principles of breakfast meat and egg selection and storage.

LESSON FOUR: CONTINUED-

4. Evaluate hard cooked eggs, poached eggs, fried eggs, omelets, bacon, sausage, ham.
5. Evaluate TVP bacon, ham, and sausage products.

ASSIGNMENTS:

LESSON FIVE: BREADS AND BREAKFAST ITEMS FROM THE GRILL

GOALS: The purpose of this lesson is:

1. To enable participants to develop the knowledge and skills needed for preparing breakfast items on the grill that results in quality products.
2. To teach each participant to use and care of the grill.
3. To have each participant learn how to adjust a recipe.

BEHAVIORAL OBJECTIVES: After completing this lesson the participant should be able to:

1. Demonstrate the ability to prepare quality breakfast items on the grill.
2. Use appropriate procedures while using and cleaning the grill.
3. Evaluate a griddle cake, a piece of French toast and cornmeal mush.
4. Discuss the effects on quality caused by over-mixing griddle cake batter, and over and under heating the grill during the cooking of breakfast breads.

ASSIGNMENTS:

LESSON SIX: CEREAL COOKERY-- BREAKFAST MENU PLANNING AND "GETTING IT ALL TOGETHER"

GOALS: The purpose of this lesson is to:

1. Have the participant gain knowledge and develop skills that are necessary to prepare high quality cooked cereals.
2. Be able to plan a "traditional" and a "non-traditional" breakfast that includes foods from each of the basic food groups.
3. Arrange in order the proper production sequence for a given breakfast menu.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Prepare products of hish starch content to yield a high quality cooked cereal.
2. Demonstrate a method of cookery which retains nutrients added to enriched rice.
3. Show volume increase in these starch containing foods as a result of cooking.
4. Demonstrate methods of cereal cookery.

LESSON SIX: CONTINUED-

5. Discuss the characteristics of high quality cooked cereals.
6. Discuss unique features of the breakfast meal.
7. Name foods from each of the basic food groups and plan them into a traditional breadfast and a "non-traditional breakfast" meal.
8. Arrange in order the proper production sequence for a breakfast meal.
9. Explain five principles of cereal cookery.

GLOSSARY

BREADS AND BREAKFASTS

Absorb-Absorption-- To absorb is to take in and hold; absorption refers to the ability of flour and other dry ingredients to take in and hold liquids.

Bake-- Cook by dry heat in an oven or closed chamber that has been preheated.

Batter- Mixture of flour, sugar, eggs, liquid, etc., which can be poured.

Beat or Whip-- Mix air into a batter with a mixing machine at high speed or with a hand whip used rapidly.

Blend-- Two or more ingredients gently folded or mixed together until smooth.

Bolting- Sifting of ground grain to remove the bran.

Bran- Skin or outer covering of wheat berry and removed during milling.

Carmelizing- Heating food containing a large percentage of sugar until a brown color and characteristic flavor develops.

Cake Leavened-- Leavened by the use of baking powder. Most popular method because of reduced preparation time. Doughnut mixes are usually of this type.

Coagulate-- To clot or curdle.

Cut In-- To distribute fat into dry ingredients in small particles by using a chopping motion with a pastry blender or two knives.

Develop Dough-- Make a dough--generally one leavened with yeast--smooth by additional mixing after the ingredients are blended.

Dissolve-- Mix dry ingredients into a liquid by stirring until no solid matter is present.

Dough-- Thick, soft uncooked mass of softened flour.

Dough Hook-- Attachment used on commercial food mixer to blend shortening into dry ingredients.

Dry Yeast- A dehydrated form of yeast.

Dust-- To lightly cover a food or surface with a dry substance, e.g., flour on a pan, powdered sugar on doughnut.

Eggs-- Provide flavor and color, act as thickeners, emulsifiers, binders or leaveners depending upon the food product.

Egg Wash-- Mixture of egg and water brushed on the top of unbaked products to aid in browning.

Fermentation-- Chemical reaction of the ingredients used in the making of dough which causes formation of carbon-dioxide and the expansion of the dough.

Flaky-- Made up of many very thin layers; such layers of dough are made by mixing fat and flour together to form small lumps. This is done in the preparation of pie crust dough, biscuits and puff pastry.

Flour - Gives body or structure to the product. Flour in yeast-raised doughs forms gluten which is elastic and permits dough to stretch or expand with leavening. Types of flour are: bread, pastry, cake, whole wheat, rye and self-rising.

Fold-- To gently mix one substance into another by an overhand motion with a mixing spoon, spatula or beater. Generally, flour or beaten egg whites are folded into a batter.

Fry-- Cook in hot fat. (Sauteing or panfrying-also deepfat frying)

Glaze-- Semi-transparent or glossy coating.

Gluten-- Tough rubbery substance formed when flour is mixed with water which serves as the structure of bread, rolls, and other products made from yeast-raised doughs.

Gradually-- Act of proceeding by stages.

Graham flour-- Unbolted wheat meal (Meal is coarsely ground grain)

Grain-- Cell structure or texture of a baked product.

Hydration-- Rehydration- Restoring water lost in drying.

Knead-- Folding or stretching dough, making it smoother by dough hook.

Leavening Agent-- Substance which causes a product to rise during baking; e.g., baking powder, baking soda, yeast, air, steam.

Measure-- To determine a specific amount of an ingredient.

Mix-- To blend two or more ingredients into one uniform mass.

Pastry Blender-- Device used to cut shortening into flour before adding liquid ingredients.

Proofing-- Process of increasing the bulk of yeast dough by placing it in a warm place, 80°F to 85°F.

Punch Down-- Forcing the gas out of the dough by folding one part of the dough over the other.

Rise-- Increase in volume creating a light, spongy texture.

Roll-- To flatten a dough with a rolling pin.

Salt-- Provides flavor, is a preservative, and enters into chemical reactions. In yeast leavened dough, salt sets the rate of fermentation by its action on yeast.

Scaling-- Weighing ingredients with a scale. Portioning batter or dough according to unit wight.

Shortening-- Imparts richness, flakiness, tenderness, flavor, texture, color and volume to a product and helps keep it fresh. Shortenings include compound-types which may be either animal or vegetable in nature, and all-hydrogenated vegetable oils.

Sift-- To pass a dry ingredient or a mixture of dry ingredients through a sieve or sifter.

Soft Dough-- Dough which lends itself to spoon-dropped or bagged-out products.

Stir-- To mix with a circular motion in combining ingredients.

Sugar and Other Sweeteners-- Improves taste, flavor, color, tenderness and helps to keep the product fresh.

Texture-- Inside grain or degree of smoothness in a product.

Volume-- Size of a product.

Wash-- To brush the outside of a product with a liquid such as egg, milk or egg wash before and/or after baking.

Whole Wheat-- Flour made from entire wheat berry.

Yeast Leavened-- Leavened by yeast. Greater preparation time. Produces a softer finished product. Jelly-filled and glazed doughnuts are examples.

FOOD SERVICE EMPLOYEE SHORT COURSE

Module I: Breads and Breakfasts

LESSON ONE: INGREDIENTS

I. Instructor preparation for class activities:

1. Prepare samples of bread, all purpose and cake flour and rye, graham and soybean flour and extra fine sugar.

2. Assemble the following:

   - .measuring cups for dry ingredients
   - .measuring spoons
   - .measuring cups for liquids
   - .straight-edge spatula, a sifter
   - .portion scale and kitchen scale
   - .a small mixing bowl and spoon for each participant
   - .2 pop bottles with leavening agent measured into bottles

3. Duplicate sufficient copies of handouts:

   #1 Purpose and objectives of each lesson

   #2 Glossary Breads and Breakfasts

5. Market order:

   All purpose flour
   Bread flour
   Graham flour
   Rye flour
   Soya flour
   Dry yeast
   Granulated sugar
   Brown sugar
   Baking powder
   Vinegar

II. The following references provide more information on the subject of this lesson:

Fowler, J. and B. West. Food for 50. New York, New York: John Wiley and Sons, Inc., 1979.

Kotschevar, L. Quantity Food Production. Boston, Massachusetts: Cahners Books, 1975.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. General Orientation	
A. Instructor introduces self and participants introduce each other.	Participants form groups of two to find something they share in common. At the end of five minutes each person will introduce his partner to the rest of the class.
B. Complete enrollment procedures . Give handouts . Students are to bring a notebook and pencil for note taking . optional text, "Food for Fifty' 6th Edition. West, Shugart and Wilson. John Wiley and Sons, 1979	
C. Sanitation and Dress Code 1. Personal . Hair nets- All hair covered . Apron or lab coat or uniform . Enclosed, comfortable shoes with stockings, footlets or anklets. . shoes- non-skid soles . no colored nail polish, nails short and clean . no heavy excessive jewelry . no gum chewing while handling food. Beverages and smoking at break only. . Handwashing- before and after each task, and after touching face, hair or handkerchief.	Ask a participant to demonstrate hand-washing technique. Ask participants to specify times that hands must be washed.
D. Introduce participants to physical plan of kitchen and work area. 1. Range- oven area 2. Mixing area 3. Work table area 4. Dishwashing- Pot and pan area 5. Handwashing facilities	Participants tour kitchen and work area. Class discussion regarding sanitation, physical plan of kitchen and work area and rules and regulations for equipment useage.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
E. Rules and regulations for equipment usuage 1. Check with instructor initially before using electrical or gas equipment 2. Equipment and work area must be left in clean, sanitary condition. 3. Each participant is responsible for cleanliness and sanitation of his own work area and equipment used. 4. Ingredients, equipment must be stored in proper place.	Participant will clean work surface using sanitary procedures. Participant will light oven and top burner.
II. Overview of the six lessons in this module A. Discuss handout #1 Purpose and Objectives of each lesson. B. Answer questions regarding handout	Handout #1: Purpose and objectives of each lesson with assignments
III. Bakery Ingredients A. Flour 1. flour- high percentage of starch, 7-16% Protein (gluten) In bread gluten forms framework that holds all other ingredients. Gluten coagulates in baking to form the structure of bread. Hard wheat flour= strong gluten increases bread making Soft wheat flour= Smaller amount and softer gluten increases cake making Starch is the ingredient in largest amount in flour. It gelat nizes when liquid, then heat is added and forms part of the product structure.	Participants will feel textures of both soft and hard wheat flours. (+ rye, graham, soybean, and rice).

LESSON CONTENT

Gluten

- H_2O needed to make gluten sticky
- manipulation brings gluten particles together to form a network. (Reason for mixing and kneading some products and avoiding it in others).

2. **Liquid**

Development of gluten.
gelatinization of starch.
reaction of the leavening agent.
Dissolving of sugar and salt.
Milk is liquid most often used- adds nutrients, flavor and cause browning.
non-fat dry milk solids can be added to dry ingredients, then water used as the liquid.
Fruit juice or other liquids sometimes is used.
Recipe must be adjusted- fruit juice and sour milk are acid, so soda must be used for part of the baking powder.

3. **Leavening agent**

Steam, air, CO_2- act by expansion of gas.
Steam partially leavens all products (is the only leavening in popovers and cream puffs).
Air- incorporated by folding or rolling dough; beating batters and dough; creaming fat and sugar; beating eggs.
CO_2 results from: combining sugar with yeast increasing fermentation and CO_2, combining acid and soda increasing $CO_2 + H_2O$
Baking products (contains dry acid, soda and starch) + moisture increasing CO_2.
Sifting soda with dry ingredients and combining with liquid.

- Must be measured exactly
  - insufficient= poor volume and color, a heavy, close grain and coarse crust
  - excess= rough, loose, uneven grain crumbly, hard, dry texture.
  - product may fall

CLASS ACTIVITY AND EVALUATION

Participants will name products in which want strong gluten network and products in which one doesn't want gluten developed.
Each student will make a gluten ball.
Half of the students will use soft flour (cake flour) and half will use hard flour (bread flour)

- make stiff dough
- knead for 10 minutes
- allow to rest 20 min. (called conditioning)
- carefully wash to remove starch
- form gluten into ball and bake at 425° for 15 mins. Lower temp. to 300° until balls are rigid and dark brown.
- Let cool, cut and look at gluten network

Participants are asked to name ingredients that act as leavening agents.
Participants name products leavened with air, steam, chemicals and yeast.
Demonstrate effect of: cold water and soda
hot water and soda
vinegar and water + soda
(a toy balloon over the top of a bottle may be helpful to demonstrate CO_2 formation)

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson [illegible]

Module I: Bre[illegible] and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
• Leavening speed must be controlled. • from chemicals most leavening action is during baking and very little during mixing or benching. • Baking time must permit full batter movement	
4. Sugar Sweetens Affects texture and browning (tenderizes gluten) Needed in yeast mixtures (food for yeast, accelerates action) Excessive sugar will cause product to fall because it over tenderizes cells.	
5. Salt gives flavor and retards action of yeast	Class will discuss texture of salt free bread products.
6. Fats- promotes tenderness by coating the gluten strands as they develop, causing them not to stick together thus promoting tenderness Not an essential ingredient in bread- but small amounts add flavor, promotes tenderness and retards staling. Is not used in large amounts, it interferes with formation of gluten.	Class will identify that adding fat to flour mixture also adds calories (ex: one slice yeast bread compared to one biscuit.)
7. Eggs- Used in many flour mixtures, adds nutrients, flavor, and color. Help retain steam (essential) ingredients for products such as cream puffs, and popovers, those would be solid mass with eggs.	Class will identify what nutrient eggs add to flour mixture (protein, fat, calories, Vitamin A and Iron).

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
IV. Weighing and Measuring Ingredients	
I. Measuring and Weighing Techniques	
A. Standard measurements and uniform measuring practices are necessary for consistent and successful results in cooking. There are special measuring techniques and special measuring equipment for dry and liquid ingredients.	
B. Dry ingredients should be weighed when possible. Weighing has the advantage of increased accuracy over measuring. Usually all dry ingredients used in a bread and breakfast recipies weighed.	
C. If dry ingredients are to be measured, there are specific techniques to follow. Dry ingredients have a tendency to pack together. Good measuring results are obtained by stirring the contents of packages to eliminate packing before measuring begins. Examples of foods which should be stirred to eliminate packing are cornstarch and powdered sugar. Brown sugar, if measured, should be packed until it holds the shape of the container.	Demonstrate with flour how this food product packs together. 1. Weigh a cup of unsifted flour 2. Sift the flour into a cup measure, level with a straight-edge spatula and weigh again. 3. The sifted flour should have less weight per volume. Demonstrate how to measure brown sugar. Pack into measure firmly enough for the sugar to keep the shape of the container when turned out. If lumpy, roll before measuring, or briefly heat in oven.
D. Gemerally, liquid ingredients should be measured.	
E. Oils, melted shortening and syrup should be measured.	
F. Firm fat is weighed.	
G. A secondary means of securing the proper amount of fat is to measure it. 1. Press the fat firmly into the measure until all air holes have been pressed out.	

5

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
V. Measuring and Weighing Equipment A. Proper equipment is essential in following standardized recipes B. There are a number of standard equipment items used in quantity food production. 1. Scoops- # of dipper= # of dippers 1 qt. #12-5T (1/3 cup), # 10-6T., #8- 8T (½)cup 2. Measuring spoons 3. Ladles 4. Gallon measure 5. Graduated measuring cup 6. Scales a.) Portion scale (one-ounce graduations) b.) Kitchen scale (one-pound graduations) c.) Platform scale (one-pound graduations) 7. Measuring cup set	Discuss Handouts: "Quantity Food Production Equipment" "Measuring Equipment" "Functions of Scales and Balances"

FOOD SERVICE EMPLOYEE SHORT COURSE

Module I: Breads and Breakfasts

LESSON TWO: Quick Breads

I. Instructor Preparation for class activities:

1. Duplicate sufficient copies of handouts:

   #1 Common Difficulties with Biscuits and Reasons Why
   2 Betty Crocker Score Card for Standard Biscuits
   3 Common Difficulties with Muffins and Reasons Why
   4 Score Card for Muffins (Betty Crocker)
   5 Nut Bread or Fruit and Nut Bread--Reasons Why
   6 Fruit or Nut Bread Study Sheet
   7 Scorecard for Quick Breads (Fruit-Nut Bread)
   8 The Mixer

2. Recipes for this lesson are from Food for Fifty:

3. Market Order:

   All purpose flour
   Baking powder
   Salt
   Sugar, granulate, white
   Shortening
   Eggs, fresh
   Dried Skim Milk Powder
   Jelly (red) or orange marmalade
   Baking Soda
   Pecans
   Margarine
   Brown Sugar
   Raisins
   Cinnamon

The following references provide more information on the subject of this lesson:

Kotschevar, L. Quantity Food Production. Boston, Massachusetts: Cahners Books, 1975.

McWilliams, M. Illustrated Guide to Food Preparation, Plycon Press, Inc., Fullerton, Calif., 1976.

Pomeranz, Y. Bread Science and Technology. Westport, Connectivut: AVI Publishing Co., Inc., 1971.

Terrell, M. Professional Food Preparation. New York, New York: John Wiley and Sons, Inc., 1971.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Introduction	
A. Breads and grain products are an important part of our diet.	
B. These products contribute valuable nutrients:	Class discussion: .Name the nutrients found in bread. .Discuss functions of each of these nutrients.
1. Carbohydrate- provides energy and spares protein 2. Protein- growth- body organs, muscle, blood, skin, skeleton maintenance and repair of body tissue- as body cells wear out or are lost or are used. example blood- red blood cell (erythrocytes) live only 120 days, must be replaced Regulation of body processes Hemoglobin- iron-bearing protein in blood- carries O_2 to cells and CO_2 away from cells Antibodies- protein in nature and maintains body's resistance to disease Hormones- Govern the metabolic reactions in our body Example: insulin- key to allowing glucose into the cells Gliaden in bread- Partially complete protein in the adult will maintain life, but has insufficient quantity of some essential amino acids. Will not promote growth. Complimentary proteins- Grains- By combining the following, a complete protein is formed. .Rice and legumes .Corn and legumes .Wheat and legumes .Rice and milk .Wheat and milk or cheese .Wheat and peanuts .Wheat, sesame seeds and soybeans .Wheat and meat or fish or poultry	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION

3. Vitamins
Standards of identity for enriched flour, bread, rolls and buns.

	Thiamin Mg/1#	Riboflavin Mg/1#	Niacin Mg/1#	Iron Mg/#1
Enriched Flour:	2.9	1.8	24	40
Enriched flour, self r.	2.9	1.8	24	40
Enriched rolls, bread or Buns	1.8	1.1	15	25

Vitamins lost in refinement are added back. Trace minerals (zinc and manganese) are lost
Thiamin (B_1) for metabolism of carbohydrate, Riboflavin (B_2) - a part of enzymes and co-enzymes essential for the release of energy within the cell.
Niacin- essential for release of energy from carb., pro., and fat

4. Minerals-
Iron- enriched with iron so that 1 slice of bread provides approxiamately same amount of Iron as 1 oz. of beef, 1 frankfurter, 1 3/4 oz. chicken
Calcium- Because bread is made with milk and many times contains added Dry Skim Milk powder it becomes an important source of calcium in diet.
7 slices= Ca in 3/4 c. milk or 1 oz. hard cheese.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
C. If breads are to be eaten and enjoyed, they must be made properly. The goals of bread making are: to produce bread that is nutritious, attractive, palatable, reasonable in cost and standardized in quality.	Participants will identify goals of bread making.
II. Procedures- A. Proper procedures will allow one to achieve the above mentioned goals. 1. Use tested, standardized recipes. 2. Do not substitute one ingredient for another Do not alter amounts of ingredients	1 and 2- Participants will discuss why recipes should be tested and standarized. Participiants will tell why ingredients should not be substituted and why one should not alter amounts of ingredients.
3. Use correct, standard tools as measures and use level measurements. Only way that one can achieve a standard product each time.	Participants will identify standard tools for measuring.
4. Use correct pan size Too large pan= dry, heavy, loaf bread Too small pan- bread may fall during baking	Participants will tell what could be expected to happen to a loaf of quick bread if baked in too large a pan and too small a pan.
5. Pans in oven should not touch each other and should be staggered on oven shelves to allow air to circulate so that products will bake evenly.	Participant will show what is meant by staggering pans on oven shelves.
6. Get ready Assemble all equipment and ingredients Why?--Save tips and know if all ingredients are on hand. Prepare baking pans before mixing the product Why?--Shorter period between mixing and baking= better product. Turn on oven, set at desired temperature Oven will be hot by time product is ready to bake. Ingredients should be at room temperature, as to get maximum volume from shortening and eggs.	Class will tell why ingredients and equipment should be assembled before mixing starts. Will tell why should prepare baking pans prior to mixing ingredients; will tell why oven should be preheated.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
7. Use only good quality ingredients, because a good quality product can't be made from poor ingredients. 8. If batter is to be baked in pans (i. e. loaves of quick bread) weigh the mixture as it is put into pans so as to assure uniform size and baking. 9. Remove product from oven when done. 10. Allow loaves of bread to cool 10 minutes before removing bread from pan.	
III. Review of Lesson One A. Ingredients- basic to breads	Participants will name the basic ingredients used in bread (batters and doughs) and discuss the properties of each.
IV. Preparation of Biscuits, Muffins and Date-Nut Loaf Bread A. Proportion of flour to liquid determines classification of batters and doughs. 1. Pour batter=1 p. flour to 1 p. liquid 2. Drop batter= 2 p. flour to 1 p. liquid 3. Soft batter= 3 p. flour to 1 p. liquid 4. Stiff batter= 4-8 p. flour to 1 p. liquid	Class will name products made from: Pour batters--popover, pancakes, waffles Drop batters--muffins, cornbread, cakes, nut breads Soft dough--biscuits, cookies Stiff dough--pie crust, pastry, yeast breads
B. Three Methods of Mixing Batters and Doughs 1. Biscuits-mixed by biscuit method (sometimes called pastry method) Steps-- a. Measure dry ingredients exactly and place in mixer bowl. b. Blend at low speed for 3 minutes. c. Measure fat exactly, add to blended dry ingredients--cut into dry ingredients so that it will give pools of fat when product is baked.	
d. Measure liquid and add last so as not to over-develop gluten. Mix until all dry ingredients are soft, not stiff or dry.	Participant will explain why liquid is added to biscuits ingredients last.
e. Biscuit dough will be soft, not stiff or dry.	
f. Place dough on lightly floured board. Knead lightly, for over kneading will produce a tough, compact biscuit.	Participant will describe why and how over-kneading causes a tough, compact product.

FOOD SERVICE EMPLOYEE SHORT COURSE

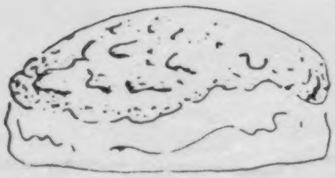
Lesson 2

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
2. Muffins--mixed by muffin method. Follow recipe exactly, read over recipe completely before starting muffins. Discuss Handout #8 "The Mixer" Recipe for Muffins	Give group II recipe and Muffin preparation packet.
Steps for "Muffin Method" of mixing: a. Measure each dry ingredient and put in mixer bowl. b. Blend dry ingredients, using flat beater, low speed for 3 mins. c. Measure each liquid, combine milk, beaten eggs and melted fat. d. Add to dry ingredients. Mix only about 15 seconds. Batter will be lumpy. e. Dip 3/4 of muffin with #24 dipper into well greased muffin tins. Using a dipper insures uniform size and is faster than using a spoon. Stir remaining batter until very smooth--finish dipping. f. Bake in 400°F. preheated oven.	Pass out duty assignment, clarify information as indicated by questions asked. Give each participant Hand-out #8, "The Mixer"--Discuss Give each participant a score card for muffins.
3. Fruit-Nut Bread--mixed by the "cake method" (alternate method for mixing muffins) Steps: a. Measure fat and sugar	Participants will describe the cake method of mixing batters and doughs.
b. Cream fat and sugar together--incorporates air and is spread out in a thin film to coat the whole gluten strand. c. Add beaten eggs to incorporate air d. Add measured, sifted dry ingredients, alternating with measured liquid so ingredients are blended.	Participants will explain why fat and sugar is creamed together and why eggs are beaten before added to creamed mixture
V. Use of mixer	
VI. Prepare and bake biscuits, muffins and date-nut bread. Follow recipes exactly.	Groups will prepare product for which they have recipes.
VII. Display baked products.	Participants will discuss how the products they made compared to the standard product
VIII. Evaluate baked products.	

COMMON DIFFICULTIES WITH BISCUITS AND REASON WHY

PRODUCT	DIFFICULTY	REASON WHY
Biscuits	Tough	Lack of fat Too much mixing
	Pale crust	Too slow an oven Too stiff a dough Flour on surface
	Uneven shape	Carlessness in handling Uneven heat
	Uneven brown	Uneven shape Uneven heat
	Flat and heavy	Wrong proportion of ingredients Improper mixing
	Coarse, porous grain	Improper mixing
	Harsh, dry, crumb	Too stiff a batter Overbaked
	Hard crust	Too long baking Too high a temperature
	Crumbly and oily	Too high a proportion of fat
	Yellow specks	Uneven distribution of soda or baking powder



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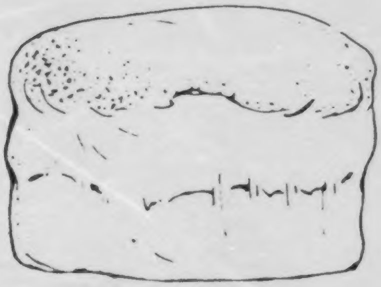
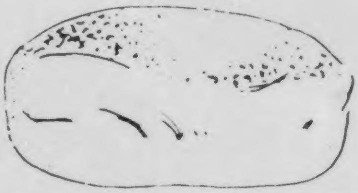


Optimum



Overmanipulated

Betty Crocker Score Card for Standard Biscuits

APPEARANCE SCORE

Golden brown tops, sides lighter, symmetrical shape, uniform size; fairly smooth level top. 2 to 3 times size of unbaked biscuit; free from excess flour. Inside creamy white; flaky, free from yellow or brown spots.

PERFECT.......4 ☐	FAIR..........2 ☐
GOOD...........3 ☐	POOR.........1 ☐

Poor Characteristics:	*Here's Why:*
Low volume	Not enough leavening; too much shortening; too much mixing or handling; oven temperature too high.
Too pale	Oven temperature too low.
Bottom crust too dark	Baked on darkened pan.
Yellow or brown spots	Too much leavening; ingredients not well mixed.
Excess flour on crust	Too much flour sprinkled on pastry cloth.

TENDERNESS SCORE

Crisp and tender crust; moist and tender inside.

PERFECT.......4 ☐	FAIR..........2 ☐
GOOD...........3 ☐	POOR..........1 ☐

Poor Characteristics:	*Here's Why:*
Tough	Lack of fat; too much liquid; too much flour; too much mixing or handling.
Crumbly	Too much leavening; too much shortening.

TEXTURE SCORE

Light and flaky, pulling off in thin sheets; medium fine grain; slightly moist.

PERFECT......4 ☐	FAIR..........2 ☐
GOOD..........3 ☐	POOR..........1 ☐

Poor Characteristics:	*Here's Why:*
Not flaky	Not enough shortening; too much or too little mixing of shortening with flour mixture; not enough kneading.
Coarse, uneven cells	Too much leavening; too little mixing.
Too dry	Dough too stiff, overbaking.
Soggy	Underbaking.
Heavy	Not enough leavening; too much mixing; underbaking; too much flour; too much liquid used.

FLAVOR SCORE

Pleasing, well blended with no taste of bitterness.

PERFECT......4 ☐	FAIR..........2 ☐
GOOD..........3 ☐	POOR..........1 ☐

Poor Characteristics:	*Here's Why:*
Bitterness	Too much leavening; improper mixing.
Burned	Overbaked, oven temp. too high.
Rancid	Poor quality shortening.

Note: With Bisquick, all ingredients except milk are always in the correct amount.

NOW ADD UP YOUR SCORE:

Appearance.......... __________
Tenderness.......... __________
Texture.......... __________
Flavor __________
__________ TOTAL

If perfect, your total would be 16. How near PERFECT did your biscuits score?

COMMON DIFFICULTIES WITH MUFFINS AND REASONS WHY

PRODUCT	DIFFICULTY	REASON WHY
Muffins	Unevenly browned	Too hot an oven Oven does not heat uniformly Pans filled too full Wrong proportions Too much beating
	Peaks	Pans filled too full Heat uneven Too much stirring Insufficient leavening Too stiff a mixture Too hot an oven
	Tough	Wrong proportions Too much mixing
	Heavy and irregular in grain. Tunnels.	Insufficient leavening Too much mixing
	Smooth crust	Too much mixing
	Hard crust	Too long baking Too high a temperature
	Harsh, dry, crumb	Too stiff a batter Overbaked

SCORE CARD FOR MUFFINS

2:4

This score card includes a definite standard which helps the beginner to know what to look for when judging.

Date ____________ Judge ____________ Possible Score, 65

Standard	Possible Score	Your Score
A. Shape		
Slightly rounded top	5	
Symmetrical	5	
Pebbled top	5	
B. Color		
Even	5	
Golden brown	5	
C. Texture		
1. Crust		
Tender	5	
Thin	5	
2. Crumb		
Moist	5	
Tender	5	
No tunnels	5	
Medium fine grain	5	
D. Flavor		
Pleasing	5	
Well blended	5	
TOTAL SCORE	65	

Kindly judge without discussion, using the following numerical rating.

1. for very poor
2. for poor
3. for fair
4. for good
5. for standard

Comments by judge:

NUT BREAD OR FRUIT AND NUT BREAD-- REASONS WHY

Muffin and biscuit methods of mixing are most commonly used, but for a very rich cake-like bread, a cake mixing method will be given.

The character of these breads will differ depending upon ingredients used, the amount of those ingredients which add richness and tenderness to the product. (Some batters are thin, others thick when poured into loaf pan.) Therefore, some are dry and "bready", others are more cake-like in quality when baked.

Keeping quality on shelf, refrigerator or freezer will vary depending on richness and moistness of freshly baked fruit and nut breads.

Baking Hints to Prevent Cracked Crust

- *Preheat oven to 350°F if nut bread is baked as soon as mixed.*
- *Preheat oven to 375-400°F. if nut bread is allowed to stand 20-30 minutes, covered, before baking.*
- *Tent the loaf pan of batter with heavy foil until bread rises and begins to brown also helps.*

REASON OR WHY

(1) The large mass of batter in the loaf pan heats through slowly. Therefore it is desirable to allow time for the leavening agent to react, and increase in volume take place before the crust sets. When this procedure is followed a baked product with a smoothly rounded crust results. When baking is too rapid, a cracked, top crust and a more solid crumb will result.

(2) Long, narrow pans will bake a loaf with a line or small crack on top. Consistency of batter will make the differences in depth of crack. Batter that touches the baking pan bakes first. As batter warms to baking temperature, it thins, and allows a film of fat and sugar to run toward the center of top crust; thus a shiny line or a sticky crack forms down center of loaf.

(3) Tent a piece of heavy foil over the top of the loaf pan filled with batter. Allow foil to remain until batter rises and begins to brown, then remove it carefully so that you do not touch the soft crust. This keeps top moist and prevents heavy crack from forming. The crack is caused because there is unbaked batter under a crust and it "erupts" when the leavening agent reacts.

FRUIT OR NUT BREAD STUDY SHEET

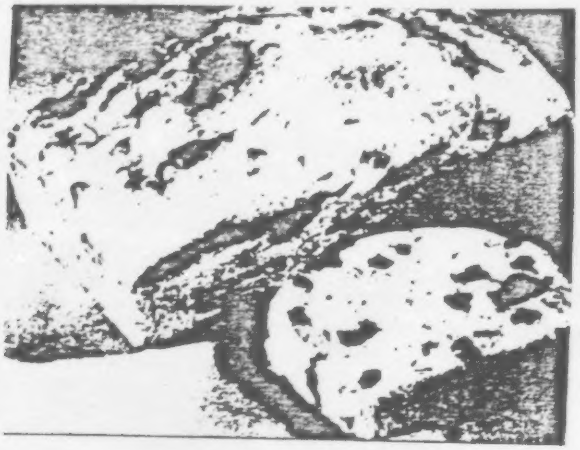
2:6

STANDARDS OF QUALITY

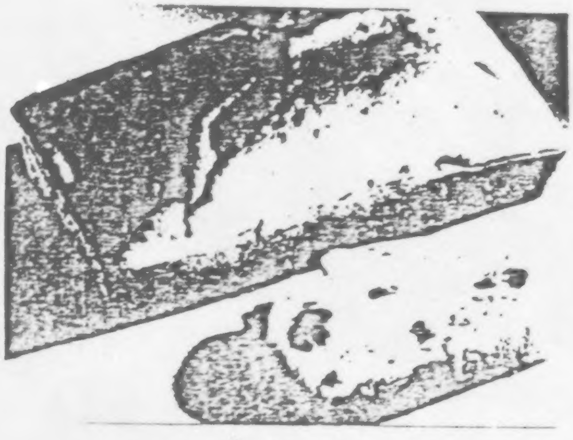
Fruit or nut breads are quick and easy to make. The kind of ingredients, the method of mixing, and the baking technique are practically the same as for muffins. Some quick bread recipes, however, are made by the cake method. Interesting variations are possible simply by adding nuts, fruits, cereals, and other flours.

Quick breads are not always baked in bread loaf pans. For example, corn bread and Sally Lunn are baked in shallow pans; spoon breads in baking pans or layer cake pans; and Boston brown bread may be baked in loaves or steamed in covered cans or special molds.

Cracks in the crust are fairly typical of quick breads and do not necessarily indicate an unsatisfactory product.



Good



Poor

ANALYZE RESULTS

GOOD QUICK BREADS HAVE:

Well-proportioned shape
Evenly rounded or flat top
Uniform color
Tender, slightly rough crust
Even grain, no tunnels
Moist, tender crumb
Good flavor

FIND CAUSES OF FAILURE

INCORRECT PROPORTIONS OR INACCURATE MEASUREMENTS CAUSE BREAD THAT MAY BE:

Undersized
Tunneled
Coarse-textured
Crumbly
Dry
Compact, heavy

IMPROPER MIXING CAUSES BREAD THAT MAY BE:

Undersized
Tough, compact
Tunneled
Crumbly, coarse

WRONG-SIZED PANS CAUSE BREAD THAT MAY BE:

Cracked, peaked
Soggy, compact
Too pale
Too brown

INCORRECT TIME AND TEMPERATURE CAUSE BREAD THAT MAY BE:

Too brown
Too light
Doughy
Heavily crusted
Cracked
Hard, dry

POOR HANDLING AFTER BAKING CAUSES BREAD THAT MAY BE:

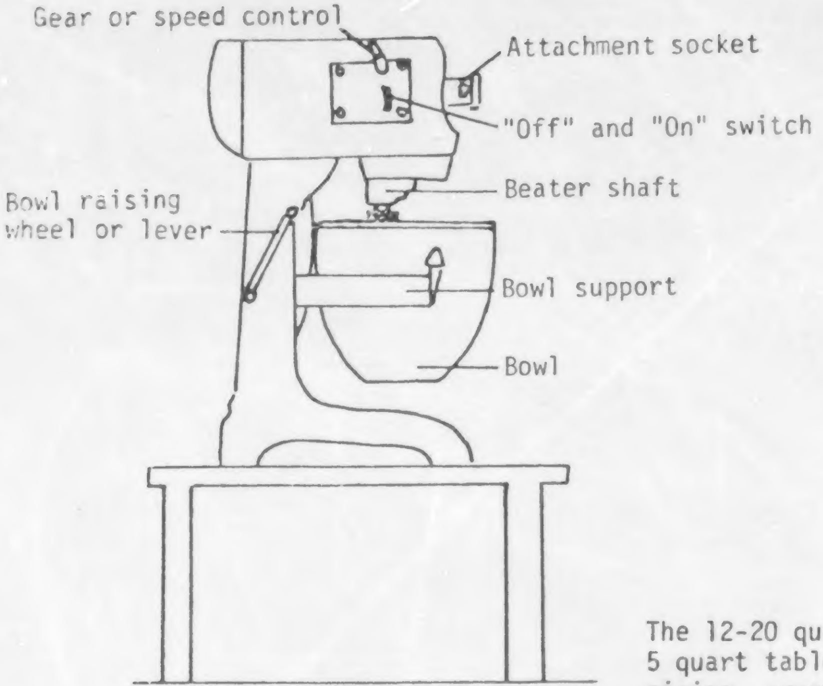
Soggy on bottom
Steamed inside

SCORECARD FOR QUICK BREADS (FRUIT-NUT BREAD)

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability

Characteristics of a High Quality Product:

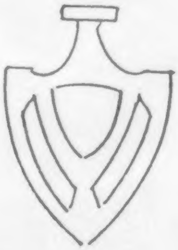

Gear or speed control
Attachment socket
"Off" and "On" switch
Beater shaft
Bowl raising wheel or lever
Bowl support
Bowl

BENCH TYPE

The 12-20 quart bench model and the 5 quart table model are used for mixing, creaming, or beating ingredients for cakes, batters, doughs, pastries, or meringues.

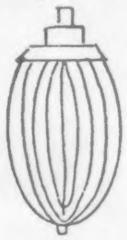
Uses for Beaters and Whips (Agitators)

Flat Beater--Use for general mixing, never use for heavy doughs.



1. Mixing main dish items such as ham-bean loaf, fish cakes, and hamburgers.
2. Mashing vegetables such as potatoes and squash.
3. Creaming mixtures such as butter and sugar, uncooked icings, honey butter, and sandwich spreads.
4. Mixing batters such as muffins, cakes, and steamed puddings.
5. Blending mixtures such as pastry and biscuits.

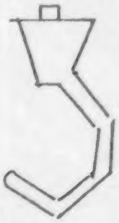
Wire Whip--Use for incorporating air into light mixtures; never use for heavy mixtures.



1. Blending dry mixes.
2. Whipping dry milk.
3. Reconstituting dry milk.
4. Beating egg whites.
5. Whipping cream.
6. Mixing light icings.

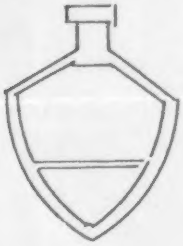
Dough Hook--Use for mixing heavy doughs requiring a folding and stretching action for best development.

1. Bread or rolls.
2. Biscuits.
3. Noodles.

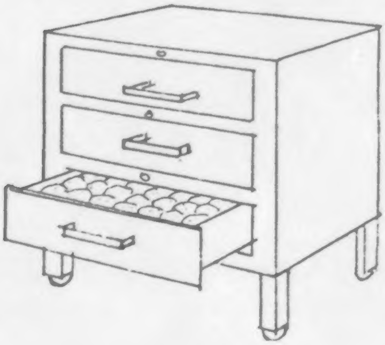


Pastry Knife--Use for combining shortening and flour by a cutting action.

1. Biscuits.
2. Pie crust.
3. Shortcake.



ROLL WARMER



The roll warmer is used for keeping a large quantity of breads and sweet rolls warm. The warmer has separate drawer compartments with individual controls for each drawer. The roll warmer keeps bread from drying out and is an efficient method fsr holding hot breads prepared in advance.

After the unit cools, remove crumbs from compartment drawers. Wash the drawers with a soft cloth and a mild detergent and water solution. Rinse and wipe dry with a soft cloth.

How To Operate A Mixer

1. Select appropriate size bowl and place on bowl support. Fill bowl with ingredients 1/2 to 2/3 capacity for best results.
2. Select proper agitator or attachment for desired use and insert onto beater shaft. Fit slot in agitator shaft over pin extending from hub and adjust until shaft is in the locked position.
3. Raise bowl to desired height by means of bowl raising lever. The agitator should not touch bowl.
4. Check to see if speed selector is on low speed and then start machine. Belt driven machine: Adjust speed control and switch to "On" position. Gear driven machine: Be sure gear is in neutral. Press start button and set gear to speed required by recipe. It is advisable to start at speed 1, then adjust to higher speeds if necessary. IMPORTANT: For gear driven machine, always put clutch lever into neutral before changing speeds.
5. Select speed desired and mix required length of time.
6. Stop machine.
   Belt driven machine: Switch to "Off" position.
   Gear driven machine: Shift to neutral gear and push "Stop" button.
7. Use bowl raising wheel or lever to lower bowl.
8. Remove beater by turning it around until pin on hub slips out of slot in beater shaft. Remove bowl.

How To Clean A Food Mixer*

CAUTION: Instructions given below are general. Read and follow the manufacturer's directions carefully.

Daily Cleaning:

1. Immediately after use, clean bowl support, beater shaft, shell, and base with hot detergent solution. Rinse and dry with clean paper towels. Scrape and brush out groove on beater shaft if necessary.

2. Wash bowl and beaters immediately after using (if egg mixtures or flour batters have been used, apply cold water before washing with hot water). Rinse and dry beaters thoroughly and hang up to prevent bending. Rinse and dry bowls thoroughly to prevent rusting.

Weekly Cleaning:
(to supplement daily cleaning.)

1. Clean entire mixer thoroughly following instructions for daily cleaning.

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*U.S. Department of Agriculture. Training Course Outline on Use and Care of Equipment. Washington, D.C.: U.S. Government Printing Office, 1960. p. 77.

Safety Practices For Use Of The Mixer

1. Select the correct bowl for the type of mixture and then select the correct beater or whip according to the bowl size and mixture.
2. Be sure to fasten the bowl and beater or whip securely before starting the motor.
3. Prevent spillage by starting the machine at low speed.
4. Do not put hands or spoons into the bowl while the mixer is in operation.
5. Always use a rubber scraper, flexible spatula, or long-handled spoon to scrape down the sides of the bowl and to remove food from the beater or whip.
6. Scrape down the sides of the bowl after the agitator has stopped.
7. Use mixing bowls for mixing only--do not put them on the range or in the oven.
8. If the mixer is used on a continuous basis, always allow time for the motor to cool. Most mixers operate at a capacity load for one hour without overheating or damaging the motor.
9. Remove agitators and attachments only when the motor has stopped.
10. Use bowls large enough to hold the food to be mixed without danger of it slopping over onto the floor.
11. Use a splash cover if bowls are filled over half full.
12. Do not use a container too heavy for you to handle safely by yourself unless wheeled equipment is available for moving the bowl and materials.
13. Should an overload occur, stop the machine and correct the condition before continuing with the job.
14. Be sure small utensils are not dropped into the bowl.
15. Do not wear loose clothing that may catch in the moving parts of the machine.

The basic steps in making yeast bread are as follows:

1. Mixing--Ingredients are combined according to the order listed in the recipe.
2. Kneading--The ball of dough is worked with the hands to develop the gluten in the dough. The dough is kneaded for 5 to 8 minutes or until it becomes smooth and satiny in appearance.
3. Fermenting--The dough is placed in a warm, moist place to allow the yeast to produce carbon dioxide gas to leaven the product.
4. Punching--When dough has risen sufficiently, it is tested by inserting two fingers into the mixture. If holes close very slowly, dough is ready for punching. Using the fist, pound the center of mixture and fold the outer edges into the center. Punch for 2 to 4 minutes; then turn inside out. This process better distributes the yeast and aids in the development of gluten.
5. Scaling--Dough is weighed into equal portions.
6. Rounding--Weighed portions are made into balls.
7. Resting--Dough rests for approximately 10 minutes to relax the gluten and make it easier to handle.
8. Molding--Dough is formed into desired shape (rolls, loaves, cinnamon rolls, etc.).
9. Panning--Dough is placed in a greased pan (seam side down in the case of loaves).
10. Proofing--Pans are placed in a proof box which is warm and humid. Dough is allowed to double in size. When fully proofed, dough slowly fills out small dents made by the fingers and is ready to be baked.

LESSON THREE:

I. Instructor Preparation for Class Activities:

1. Assemble the following ingredients:

- dry yeast
- Sugar
- Salt
- Nonfat dry milk
- Fat (shortening)
- Bread flour
- Margarine
- Eggs
- Marachino cherries
- Nuts (pecans or walnuts)
- Cinnamon
- Poppy seeds
- Sesame seeds
- Raisins

2. Make one recipe of Plain Rolls--Food For Fifty, page 138. Have dough ready to be shaped 30 minutes after class starts.

3. Duplicate sufficient copies of Handouts:

#1 Bread Ingredients and Their Functions
#2 Ordinary Bread Faults and Their Causes
#3 Shaping Techniques
#4 Shaping Rolls
#5 Scores for Judging Rolls
#6 ABC's of Bread Storage

LESSON CONTENT

I. Introduction
   A. Breads are an important part of the diet.

      1. Adds variety (taste, appearance)
      2. Economical source of energy
      3. Contribute valuable nutrients: Complex carbohydrate, protein, various B vitamins, trace minerals (Fe, Zn, magnesium, Iodine)
         - flour is enriched with Fe
         - Zn is refined flour contains only 1/5 of the zinc of whole grain
         - Magnesium is lost in refining- flour is very good source if it is whole grain.
         - Standards of identity for enriched flour, bread, rolls & buns:

Mg./lb.	Thia.	Ribo.	Niac.	Fe
Enriched flour	2.9	1.8	24	40
Enriched self-rising flour	2.9	1.8	24	40
Enriched bread, rolls or buns	1.8	1.1	15	25

Trace minerals zinc & magnesium are not replaced.

II. Breads
   A. Maybe leavened with yeast (yeast breads)

      1. Lean dough: A dough made with little or no sugar & shortening.
         a. Bread- white, wheat, French
         b. Rolls- white, brown and serve, hamburger
         c. Takes longer for yeast to produce leavening effect
      2. Sweet dough: A dough made from sugar, shortening & eggs.
         a. Bread- raisin, cinnamon
         b. Rolls- caramel, hot cross buns, etc.

      (Start activity of shaping rolls and preparation of quick rolls while continuing lecture)

CLASS ACTIVITY AND EVALUATION

A. Ask participants to tell why bread is an important part of the diet.

Ask participant to discuss the nutritional differences between breads made from whole grain flour and refined enriched flour.

A. Ask class for examples of products made from lean dough.
   Ask why yeast acts more slowly in lean dough than sweet dough.
   Distribute Handouts #3 and #4
B. Shape rolls from "plain dough recipe"

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
3. Principles of Yeast Bread preparations a. Dry yeast is blended with warm water and sugar; the yeast mixture is held at warm temperature. This procedure will: . hydrate dry yeast cells. . Provide food (sugar) for growth of yeast cells thereby producing carbon dioxide for leavening. . Provide a warm temp. for rapid growth of yeast growth of yeast cells. (Cold temperature delays yeast growth; too high temp. kills yeast cells). . Avoids depressing effect of salt on rate of yeast growth	3. a. Why blend yeast in warm water & sugar?
b. Kneading dough develops elastic gluten structure essential for proper fermentation. . Kneading of dough more evenly distributes yeast cells through the dough for more even leavening action. . Kneading dough after first fermentation period further increases dispersion of yeast and gas cells.	b. Why knead dough?
c. Oven heat causes rapid increase in yeast activity with increase in bread volume during 1st part of baking period.	c. Why does volume increase during 1st part of baking period?
d. Selected factors which will affect quality characteristics of bread dough are: . Temperature for yeast activity . Effect of salt on yeast activity . Effect of kneading	d. What are factors which will influence the quality characteristics of bread?
e. Factors which contribute to browning of crust are: . Dextrinization of starch . Carmelization of sugars (Sucrose and Lactose)	e. Why does bread brown during baking?
f. For best results in bread baking . Proper equipment is needed . Temperature controls on oven must be right.	f. What are factors which will provide good results in bread baking?

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
. Standardized recipe's . Good quality ingredients . Weigh and measure accurately . Know and use specific techniques recommended in recipe.	
1. Mixing- Combine ingredients in order listed 2. Kneading- Mixing of dough to develop gluten 3. Punching- Folding of dough from the sides into the middle until most of gas is expelled. This relaxes gluten and remixes ingredients so that yeast obtains new food. 4. Proofing- The fermentation of the sugar in the dough. Yeast multiply--produces CO^2 which leaves dough . Temperature of 80-85^0 F and humidity of- 75% is desirable. . Proofing is complete when dough has doubled . Usually requires 15 to 45 min.	Define: Mixing, kneading, punching, proofing, scaling
5. Scaling- Dough is weighed into equal portions. . Keep oven temperatures constant for the specified time . Preheat ovens to desired temperature.	Why preheat oven?
4. Production Stages or Steps in yeast Bread preparations: a. Go over recipe and assemble all ingredient and small utensils (scales, liquid measuring containers, pans, etc) b. Weigh and measure ingredients	4. How can time and energy be saved in assembling ingredients and small utensils
c. Mixing of ingredients- The three most common methods: 1. Straight dough method- Ingredients are combined, kneaded and allowed to raise, after rising is punched, portioned and allowed to rest. Dough is then shaped, panned, proofed & baked.	Name the 3 most common mixing methods. Describe each of these methods.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
2. Sponge Method: The yeast is combined with part of the liquid, sugar & flour. The mixture is covered and set in warm place (80-85°) until it is light and bubbly or spongy. Then fat, salt, remaining flour and remaining ingredients are added to the sponge to make a stiff dough, after this step, the procedure is same as straight dough method (above). 3. Quick action method or dough method. Batter or No-Knead Method-- As the name implies, the kneading and shaping steps are omitted. Mixing is faster because bread is made from a batter rather than a dough. The texture of products made by this method is not as fine and uniform as bread from a kneaded dough. Products made by the no-knead method have a higher moisture content. This method is frequently used in the preparation of dinner rolls.	
d. Proofing 1. Optimum conditions- Avoid chilling. No lower than 70 degrees or higher than 85% . Draft Free . Controlled humidity (75% ideal) 2. Finger tip test- To determine punch time insert 2 fingers in dough to see if it falls or springs back into place. If it falls, the dough is ready. 3. To retard dough, refrigerate below 38 degrees.	d. Name and discuss ideal proofing conditions
e. Punch down on dough 1. Purpose: Punch and turn dough when double in bulk to retain sweet, nutty flavor. . Provides or makes available new food supply for yeast growth. 2. Procedure- Fold from sides into middle, punching out most of the air.	e. Why should dough be punched down? How do you punch down bread?

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
f. Scale, shape and pan 1. Scale- Weigh into equal parts 2. Shape- As desired according to type of bread or rolls to be baked.	f. Define what is meant by each term: Scale, Shape, Pan
g. Pan proof rolls or bread 1. Rolls about 30 minutes (to double in volume) 2. Loaf of Bread- 1¼ hours(to double in volume) 3. Effects of over cooking h. Bake in preheated oven 1. Usual temperatures- 400-425°. i. Test for doneness j. Remove from oven and cool.	
5. Trouble-Shooting Bread Failures . Excessive volume or poor volume . Too dark crust . Poor texture . Tough crust	5. Distribute Handout #1--Bread Ingredients and Their Functions #2--Ordinary Bread Faults and Their Causes Discussion of Handouts
6. Standards for judging product.	6. Discuss Handout #7--Scoring Rolls
7. Prepare and Bake Rolls a. Distribute recipes 8. Display baked products	
9. Evaluate baked products	9. After scoring each product each participant will enter the score for each product on the blockboard. One participant from each group will describe standards for that group's product Another participant will average the scores for each of the products. Discuss products comparison to the standards.
10. ABC's of Bread Storage	10. Discuss Handout #6--ABC's of Bread Storage
11. Summarize and Questions.	

BREAD INGREDIENTS AND THEIR FUNCTIONS

INGREDIENTS / MAIN FUNCTIONS IN FINISHED PRODUCT	BINDING AGENT	ABSORBING AGENT	AIDS KEEPING QUALITIES	BACK BONE AND STRUCTURE	AFFECTS EATING QUALITIES	NUTRITIONAL VALUE	AFFECTS FLAVOR	AFFECTS FERMENTATION	AFFECTS GLUTEN	TEXTURE AND GRAIN	IMPARTS CRUST COLOR	AFFECTS SYMMETRY	VOLUME	PRODUCES TENDERNESS	ADDS QUALITY TO PRODUCT
BREAD FLOUR	X	X	X	X	X	X	X								
SALT							X	X	X	X					
SUGAR			X		X	X	X	X			X	X			
SHORTENING			X		X	X				X				X	X
MILK SOLIDS			X			X	X			X					X
WATER	X														
YEAST							X			X			X		

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56

From: Understanding Baking by Amendola and Lundberg. CBI Publishing Company, Inc., Boston, Mass. 1970 Page 56.

ORDINARY BREAD FAULTS AND THEIR CAUSES

CAUSES \ FAULTS	IMPROPER MIXING	INSUFFICIENT SALT	TOO MUCH SALT	DOUGH WT. TOO MUCH FOR PAN	DOUGH WT. TOO LIGHT FOR PAN	INSUFFICIENT YEAST	TOO MUCH YEAST	DOUGH PROOFED TOO MUCH	DOUGH UNDER PROOFED	DOUGH TEMP. TOO HIGH	DOUGH TEMP. TOO LOW	DOUGH TOO STIFF	DOUGH TOO SLACK	PROOF BOX TOO HOT	GREEN FLOUR	DOUGH CHILLED	TOO MUCH SUGAR	INSUFFICIENT SUGAR	DOUGH TOO YOUNG	DOUGH TOO OLD	IMPROPER MOLDING	INSUFFICIENT SHORTENING	OVEN TEMP. TOO HIGH	OVEN TEMP. TOO LOW	OVER BAKED
LACK OF VOLUME	X		X		X	X			X							X			X	X			X		
TOO MUCH VOLUME		X		X				X												X				X	
CRUST COLOR TOO PALE											X			X				X		X					
CRUST COLOR TOO DARK											X						X		X				X		
CRUST BLISTERS															X				X	X	X				
SHELLING OF TOP CRUST									X			X			X			X							
POOR KEEPING QUALITIES		X						X		X		X						X		X		X		X	
POOR TEXTURE, CRUMBLY								X						X					X	X				X	
CRUST TOO THICK																		X		X				X	X
STREAKY CRUMB																					X				
GRAY CRUMB									X	X				X											
LACK OF SHRED								X											X	X					
COARSE GRAIN	X				X			X			X								X	X	X				
POOR TASTE & FLAVOR		X								X										X					

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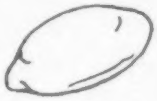
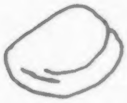
From: Understanding Baking by Amendola and Lundberg. CBI Publishing Company, Inc., Boston, Mass. 1970 Page 62.

SHAPING TECHNIQUES

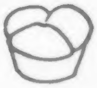
Sweet yeast doughs lend themselves to a number of interesting shapes and variations. After shaping, let rise until doubled in bulk. Bake on a lightly greased pan in a hot oven (425° F.) for 12 to 20 minutes depending on the size.



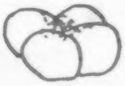
Dinner rolls. Roll dough into cylindrical shape, approximately 4 inches long, tapering at ends.



Parkerhouse rolls. Roll dough 1/4 inch thick. Cut with biscuit cutter. Brush with melted butter. Make crease across each. Fold so top half slightly overlaps. Press edges together at crease. Place close together on pan.

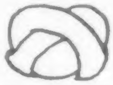


Cloverleaf rolls. Form bits of dough into balls about 1 inch in diameter. Place 3 balls in each greased muffin cup. Brush with melted butter.

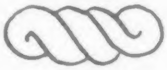


Lucky clovers. Shape in balls and place in muffin pans. With scissors divide the rolls in half, then in quarters, cutting almost through to the bottom of the rolls. Brush lightly with water or melted butter. If desired, brush with slightly beaten egg white diluted with 1 tablespoon of water and sprinkle with poppy or sesame seeds.

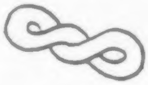
For all the twisted shapes, roll dough a little less than 1/2 inch thick. Cut into strips 3/4 inch wide and about 6 inches long.



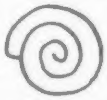
Knots. Twist and tie each strip into a knot. Press ends down on greased baking sheet.



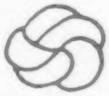
Braids. Braid three or four strips together.



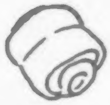
Twists. Fold an 8 inch strip in half and twist in opposite directions.



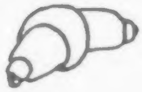
Snails. With forefinger hold one end of the strip on the baking sheet. Twist and wind the strip around and around. Tuck the other end underneath.



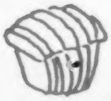
Rosettas. Tie a loose knot in the center of an 8-inch strip. Bring one end up through the center and the other end over the side and tuck underneath.



Butterflies. Roll dough 1/8 inch thick into an oblong 6 inches wide. Spread with soft butter and roll up like a jelly roll. Cut into 2-inch pieces. Press across the center of each with a knife handle (to resemble a butterfly).

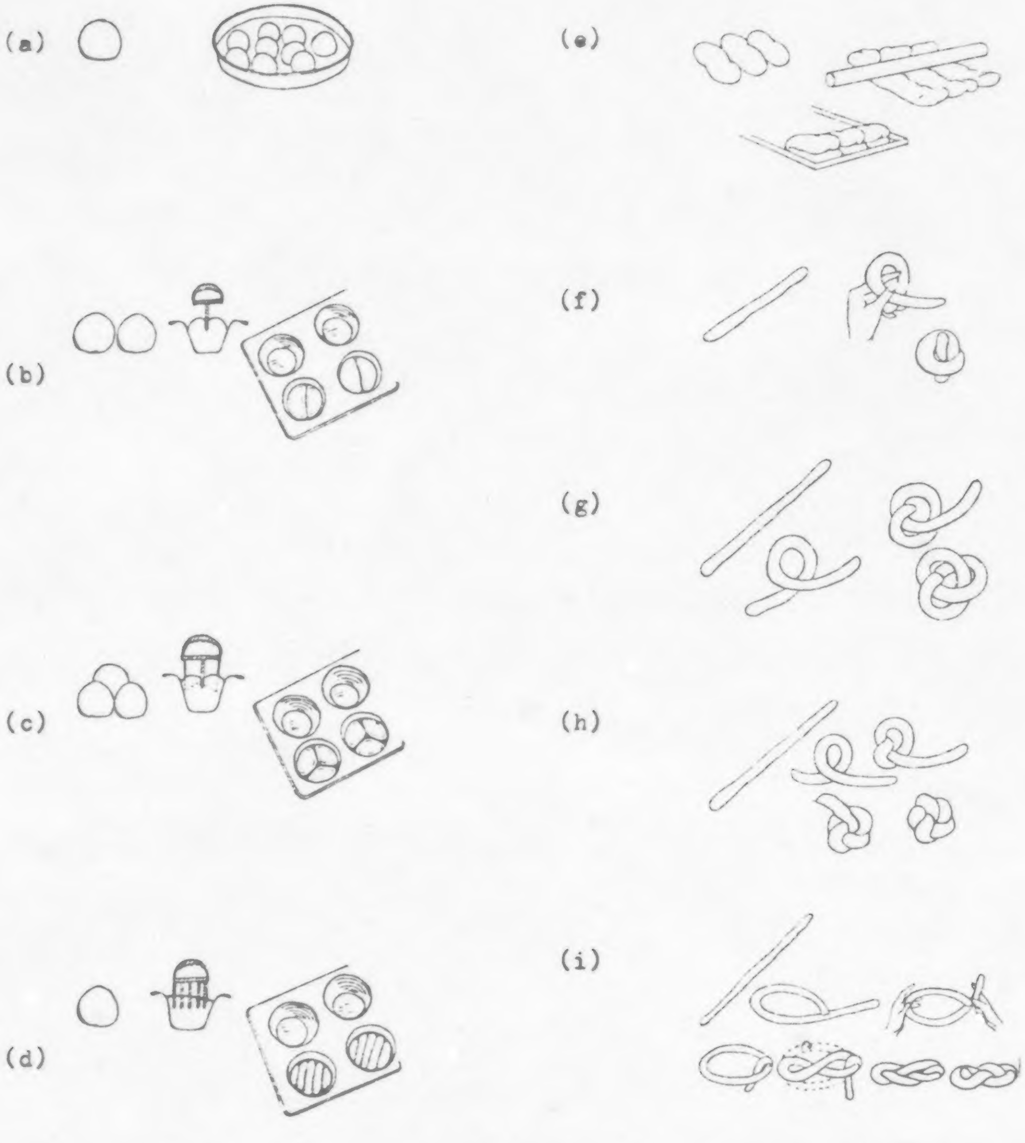


Crescents. Roll dough into circular shape about 1/4 inch thick. Cut into wedge-shaped pieces. Brush with melted butter and roll up, beginning at the wide end. Press point down firmly and curve into crescents when placed on pan.



Fan Tans. Roll dough to a very thin sheet. Brush with melted butter. Cut into strips 1 inch wide. Stack 6 strips evenly and cut into 1 1/2-inch pieces. Place cut side down in muffin pan.

SHAPING ROLLS



Some techniques used to make rolls are shown here: (a) pan rolls; (b) twin rolls; (c) cloverleaf rolls; (d) fan tans or butter rolls; (e) Parker House rolls; (f) single or bow-knot rolls; (g) double or rosette rolls; (h) kaiser knot rolls; and (i) triple or braided rolls.

Question: Would any of the above be considered hard rolls having been made from lean dough?

Answer: The rolls displayed and named are all soft (rich) dough rolls except for (h) kaiser knot rolls, which are made from lean dough.

Source: Kotschevar, L. H., QUANTITY FOOD PRODUCTION, Boston, MA: CBI Publishing Company, 1974, pp. 451-452.

SCORES FOR JUDGING ROLLS

Actual Score

1. Appearance (25 points)
   - a. Is the color of the rolls, top and bottom crusts, even golden brown? (10 points) ____
   - b. Is the crust smooth with no cracks or buldges? (5 points) ____
   - c. Are the rolls uniform in size? (5 points) ____
   - d. Are the rolls uniform in shape? (5 points) ____
2. Crumb (30 points)
   - a. Is the roll light and tender? (10 points) ____
   - b. Are the holes of even size? (10 points) ____
   - c. Is inside the roll free from dryness or doughiness? (10 points) ____
3. Crust (10 points)
   - a. Is the crust crisp and tender? (10 points) ____
4. Flavor (35 points)
   - a. Is the taste pleasant with a sweet nutty flavor? (15 points) ____
   - b. Is the odor pleasant with no flat, sour or objectional odor? (15 points) ____
   - c. Is there enough salt, sugar, or fat for good flavor? (5 points) ____

SCORE ____

An _excellent_ roll would have a score of 90-100.

A _good_ roll would have a score of 80-90.

A _fair_ roll would have a score of 70-80.

A _poor_ roll is anything that rates less than fair.

ABC'S of Bread Storage

For the life of it, bread deserves good treatment. Bread is a perishable food and how it is stored affects its good eating qualities. Wrapping and storage conditions are factors in maintaining freshness. Signs of staling are loss of flavor and aroma of fresh bread, an increase in firmness and crumbliness, and development of a harsh texture.

ALWAYS WRAP AT THE START

A

In the modern bakery, bread is scientifically wrapped in moisture-resistant material. This is the best procedure for maintaining freshness because it keeps the bread in an ideal, humid atmosphere. *Wrapped bread or packaged rolls should be left in original wrappers when placed in storage units.* Bread or rolls which may be purchased unwrapped, can be kept satisfactorily if wrapped in moisture-vapor proof papers or, if placed in a moisture-resistant bag before storing. Exceptions are the hard- or crisp-crusted breads and rolls. These products are best when eaten fresh.

When serving bread or when making sandwiches, remove only as many slices as needed. Fold the excess wrapping material over the remaining bread to retain moisture and to exclude air-borne mold spores.

BE WISE ABOUT STORAGE AREAS

B

Refrigerator storage: Bread may be stored in the refrigerator to retard mold growth, especially during hot weather, but the longer the refrigeration period, the firmer bread becomes. *Refrigeration temperatures step up staling.* Use of wrappers or special containers does not offset the affects of cool temperature on bread freshness.

Freezer storage: Bread should be stored in frozen food cabinets at 0°F., or lower. These temperatures keep the flavor, freshness, original moisture and aroma of bread intact if it is wrapped securely in moisture-vapor proof material beforehand. Bread, thawed or fresh, stales at the same rate under like storage conditions. Fresh hard- or crisp-crusted breads or rolls should be wrapped loosely in kraft paper. To use, unwrap and thaw bread at room temperature. Heat, uncovered, in a hot oven for about five minutes and serve immediately. *Freezing stale or partially stale bread will not restore its freshness.*

Bread box storage: Properly wrapped bread may be stored satisfactorily at room temperature in a clean, dry, ventilated storage unit, container or drawer. Increased ventilation of the unit should be allowed for during hot weather. Such units should be placed away from all heat-producing equipment, such as: Ranges, refrigeration units, radiators, water heaters, or clothes driers. Temperatures above 80°F. foster mold growth.

CLEAN FOR GOODNESS SAKE

C

Clean, dry containers are an unquestionable necessity for giving bread the care that it deserves. All storage containers should be thoroughly washed, weekly. Baking soda dissolved in warm water is the preferred agent for odorless cleaning. The unit should be dried well, including all joinings and it should be free of crumbs. Any remaining moisture or crumbs may favor mold growth.

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NE-7001 V & G 25M

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 4

Module I: Breads and Breakfasts

I. Instructor Preparation for Class Activities

A. Duplicate sufficient copies of Handouts
  1. Breakfast Egg Cookery
  2. Scorecard for Cooked Egg Products

B. Market Order
  1. Bacon
  2. Ham
  3. Sausage
  4. Hamburger
  5. Kraft Sausage Seasoning

C. Assemble demonstration equipment
  1. Two frying pans
  2. Saucer (for breaking eggs)
  3. Slotted spoons
  4. Pancake turner
  5. Cooking oil
  6. Complete job sheet and post

II. References

A. Kotschevar, L., QUANTITY FOOD PRODUCTION: Boston, Massachusetts; Cohner Books, 1975.

B. Mario, T., QUANTITY COOKING: Westport, Connecticut; AVI Publishing Co., 1978.

C. West, Shugart, Wilson, FOOD FOR FIFTY: New York, N.Y.; John Wiley and Sons, 1979.

Lesson 4

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Methods of Cooking egg	I. Methods: Discuss "Egg Recipes", FOOD FOR FIFTY, page 207
1. In the shell- either soft or hard . on top of stove . automatic egg cooker . wire basket in steam jacketed kettle . compartment steamer- 5 lb. pressure. . bring to room temperature prior to cooking prevents shells from cracking . cooling immediately after hard cooking stops cooking process- prevents developement of ferrous sulfide (greenish) ring around yolk.	1. Demonstrate cooking eggs in shell a. eggs directly from refrigerator and heat applied. b. eggs brought to room temperature prior to applying heat c. Hard cooked and allow to cool to room temperature. d. Hard Cooked- Cooled immediately by immersing in water. e. Compare quality use- Handout #2 Accepted Standards for Cooked Eggs
2. Poaching. . Water to cover eggs. . Broken into saucer and slid into water . Water simmering when eggs are added . Addition of vinegar and salt to prevent whites from spreading.	2. Three participants demonstrate: a. breaking egg directly into simmering water. b. breaking eggs into saucer and sliding into simmering water c. sliding broking egg from sauce into water with vinegar and salt added. d. out of refrigerator
3. Frying. . Usually fried to order on grill- Low heat (325^{0}F) . High temperature toughens protein . In quantity fried in oven . "Country- fried"- Small amount H_2O added and covered to set white . "Blind-folded"- Hot fat flipped over egg while cooking.	3. Demonstrate: Top of stove. a. fried 425^{0} High Temperature b. fried 300^{0} Low Temperature c. Compare quality

FOOD SERVICE EMP EE SHORT COURSE

Lesson 4

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
4. Scrambled- Quantity Cookery--add ½ c. Bechamel sauce to 2 doz. eggs Oven method, Steamer method, Steam table	4. Prepare scrambled eggs in steam table a. Country style (recipe in FOOD FOR FIFTY, page 208) b. Scrambled and add water c. Scrambled and add milk
5. Omelets . Cooked to order . Quantity- Baked in Oven . Variety: Leftover meats or cooked beans, left over eggs Vegetable- Onion, tomato, green pepper, green peas, green beans, etc. Cheese- Swiss, cheddar, drained cottage, etc. Jelly, Meat, Fruit; (Crushed pineapple with curry) (Pineapple or fruit cocktail with coconut) Sauce- Spanish, Cheese, Capers Western- Ham, diced green pepper and sauted onion.	5. Refer to Food for Fifty- Page 209 Demonstrate cooked to order and demonstrate cooked on grill in quantity. Scant 4 oz. ladle of beaten egg makes one 2-egg omelet.
6. Cooked eggs to be used in egg cutlets, creamed eggs, etc. . Saves labor . Break eggs into oiled counter pan, cook in steamer or bake in oven covered. . Cook to doneness of hard cooked eggs then chop . Save peeling eggs separately.	
II. Methods of Cooking breakfast meats. 1. Bacon- Cooked by dry heat method a. Oven-fried- Method of choice for Quantity. Remove one hour prior to panning bacon. Arrange on sheet pan, so that lean slightly overlaps fat of next slice bacon. b. Blanched- Then cooked crisp to order . Cooked in oven approxiamately 20 minutes. Fat drained off, bacon stored till ordered. c. Grilled d. Pan Broiled e. Broiled	1.a. Refer to recipe Food for Fifty p. 304 Demonstrate- Panning and oven-frying
2. Ham . Usually partially or fully cooked . Sliced ¼" to 1/8" thickness a. Pan-broil- cooked in pan, drain fat as it accumulates b. Grilled c. Broiled- 3-5 Minutes	2. Demonstrate- Panbroiling

LESSON CONTENT

3. Canadian Bacon (Smoked boneless loin of pork)
   Cooked same way as Ham
4. Link Sausage
   Same methods as bacon
   Preferred method for Quantity is oven at 400° F 10-15 Min.

II. Selection and Storage

1. Ham
   - Years ago were so fully cured and fully preserved could store without refrigeration
     Still available particularly in Southern U.S.
   - Now have a quick cured product and which is highly perishable - Must refrigerate.
   - The process involves fixing color-Smoking in smokehouse, which cooks the ham.
   - Hams may be partially or fully cooked
   - Presliced in:
     1/16 inch raw cured Ham - thinner for items such as Virginia cured ham - it's raw
     1/8 or ¼" partially or fully cooked
   - Here- More economical if boned
   - If in freezer storage - wrapped carefully to prevent freezer burn
     0° F is recommended temperature
     Salt speeds up rancidity so freezer life is shortened to 6 months.
2. Bacon-
   - Given a short cure which fixes color and develops flavor.
   - Should be well streaked with lean
   - Strips not longer than 8-10"
   - Freezer storage - 1 month - at 0° F.
   - Regularly sliced- 20-22 slc
   - Hotel Sliced- 28-30 Slc
   - Regular Pack, shingle pack, or flat pack on parchment paper
   - Slab Bacon- With or without rind, cut 18-20 slice #1

CLASS ACTIVITY AND EVALUATION

Show examples of various packs.

LESSON CONTENT

3. Sausage
   - Usually made from fresh pork trimmings
   - Purchased in natural or artificial casings
   - Breakfast sausage- Prefer 12-16 links per pound
   - Breakfast sausage - 3-4" diameter and sliced 12-14 slices per pound
   - Fresh sausage also available in bulk.
   - Numerous variety: Fresh, smoked, fully cooked, partially cooked (brown and serve)
   - Directions on package regarding cooking is best guide
   - Refrigerated storage for short periods
   - Freezer storage- 3 months at 0° F.
4. Textured Vegetable Protein Products
   - More and more well accepted
   - Nutrient content compared to meat
   - Stored refrigerated like bacon and ham.
   - Freezer- 3 months.

IV. Care of Meat
- Check weight of meat delivered with that called for on invoice
- Chilled products should not be above 40°F
- Should be stored at 32° Humidity 80-90%, can be stored 3-4 days for fresh meat.
- Stored away from other foods
- Foreign flavors may be traced to fruits and vegetables stored in some refrigerator
- Light cured meat is stored wrapped or covered
- Frozen meat thawed- Cooked at once
- Cooked meats, stored well covered, under refrigeration.

A. Eggs- Handout #4"12 Guides to Breakfast Egg Cookery"
Mario, Quantity Cookery p. 346&347

High Quality egg out of shell:
- Yolk will stand up high and firm above white
  Diameter small, centered in white
- White High ratio of thick, firm white that stands up.
- Odor Mild egg aroma.
- Grades- is on voluntary basis
  Federal consumer grade: AA (fresh fancy), A & B
- Also classified for size

CLASS ACTIVITY AND EVALUATION

4. Have available
   Morning Star Farm's Bacon, Ham, Link Sausage
   Prepare and cook samples of each
   Taste and evaluate these products and compare flavor and appearance with actual meat products.

Break egg and evaluate quality- Compare

From: Quantity Cooking by Thomas Mario, AVI Publishing Co. Inc., Westport, Conn. 1978 Pp.346-52

BREAKFAST EGG COOKERY

Although eggs are featured widely on luncheon menus, sometimes in elaborate forms, their simplest preparation is at breakfast. At breakfast, however, both the dining room staff and the kitchen are likely to receive the largest number of customer complaints. Patrons will object if the eggs are delayed, if they are lukewarm instead of hot, if they are too soft, too firm or poor in appearance. Sometimes the complaints are unfounded, but more often they are justified. To handle orders quickly and efficiently, the breakfast cook must set up his station each morning so that all foods, utensils and equipment are ready for immediate action. At least one hour before breakfast, eggs should be removed from the refrigerator so that they can reach room temperature, the best temperature for boiling, poaching, omelets and other egg dishes. The eggs should be in carton separators or in a bowl nearby so that they can be cracked, opened and turned into the proper utensil with a minimum of motion.

Pans for frying eggs or omelets should be seasoned (p 104), wiped clean, and within arm's reach. There should be enough pans for the anticipated breakfast business. A container of clarified butter should be as close to the cooking area as possible. Towels for handling equipment, and clean towels of cloth or paper for wiping excess fat from plates should be available. Flexible as well as firm spatulas, forks and wire whips for beating, slotted spoon, skimmer and knives should be in position. Bacon should be blanched for crisping at the last moment. Broiler, griddle and range top should be preheated. The proper pan should be filled with water for poaching eggs. Quartz heating lamps, if used, should be switched on. Once the routine is learned and set up, it can be easily followed from day to day. Although different egg dishes such as omelets or shirred eggs require different methods of preparation, there are some general procedures which apply to all egg cookery.

12 GUIDES TO BREAKFAST EGG COOKERY

(1) All eggs for breakfast cookery should be fresh not only for the sake of flavor but because stale eggs cause problems in poaching, boiling or frying. There are a number of ways of judging freshness, but for the busy cook behind the range, the simplest way is to open it onto a dinner plate. When it is fresh, the yolk is high and rounded rather than flat or broken, and the white clings to the yolk in a compact shape; the white should not be watery or run to the rim of the plate.

(2) Since freshness is so important to successful egg cookery, the breakfast cook should immediately inform his supervisor if eggs show signs of staleness or of incipient spoilage such as a strong odor.

(3) Eggs should be removed from the refrigerator at least one hour before the dining room is opened for breakfast to allow the eggs to reach room temperature when they are best for most egg dishes. After the breakfast period, any unused eggs should be returned to the refrigerator or to a cook who needs them at the time. If breakfast is served over a long period (from 7 to 11 A.M.), eggs should be removed from the refrigerator in batches, allowing enough time to reach room temperature.

4:1
2

(4) Learn to thoroughly know the performance characteristics of the range tops, open burners or griddle where egg dishes are prepared. If one part of the range top is consistently hotter than another, be prepared to move pans to the positions which best serve your purpose.

(5) To open eggs, crack them sharply against the side of a dish, the side of a cutting board or any hard surface as close as possible to the utensil or dish in which the eggs are to be dropped. Hitting the eggs too lightly causes difficulty in opening them; hitting them too sharply may break the yolks. Experience will guide you rather quickly.

(6) Eggs may be opened using one or both hands. At one time chefs insisted that all eggs be opened with two hands, using the right thumb to remove any white remaining in the shell. Nowadays, busy breakfast cooks use one hand to open eggs. It is a special knack, but not a difficult one which an instructor or supervisor can demonstrate. To open an egg with one hand, hold the hand over the egg, crack the bottom against a hard surface, move the front of the shell forward with the thumb and first two fingers, move the back of the shell rearward with remaining fingers, and drop the egg into the container or pan. This will take a moderate amount of practice and can best be learned when eggs are being opened in quantity, and when yolks and whites are to be mixed. If yolks and whites are to be separated, both hands should be used to move the yolk back and forth, permitting the white to drop into a container.

(7) When learning to open eggs by hand, or if in doubt about the freshness of eggs, always open one or two eggs into a dish before adding them to the pan or griddle. Any piece of shell can then be removed. If yolks break, they may be used for another purpose.

(8) The kind of shortening you use for frying will be specified by your supervisor. The best quality shortening, however, for egg frying, omelets, scrambled eggs, etc., is clarified butter (p 98). Butter flavor is desirable for eggs, and the process of clarification raises the smoking point of butter so that it can withstand higher heat without turning black.

(9) When making eggs in quantity, such as scrambled eggs for a large breakfast party, beat the eggs slightly, and let them flow through a china cap. Straining will eliminate any shell particles, hard pieces of white, etc.

(10) Coordinate your work so that breakfast foods that require different lengths of cooking times will be ready simultaneously. If link sausages that take 12 min cooking time are to be served with eggs, they should be partially cooked in advance and kept in a warming unit to be finished when the eggs are ready. If bacon is to be crisped at the last moment, plan to take it off the fire as close as possible to the moment the eggs are finished.

(11) Hot egg dishes should be hot. Plates should be kept in a plate warmer. If plate covers are available, they too should be kept in a plate warmer and used whenever practical.

(12) Listen to orders carefully. A waiter may use slang terms such as "up," "straight up" or "sunnyside up," meaning the eggs are not to be turned; or "over easy," meaning gently fried on both sides; or "soft scrambled" or other terms. If in doubt about an order, ask the waiter precisely what is meant.

Scrambled Eggs — 1 Portion, 3 Eggs

Two or three eggs are normally served for a portion although occasionally there may be an order for a single scrambled egg. Usually eggs are not scrambled in the same pans used for omelets or for frying eggs. The reason for this is that in the process of scrambling a small amount of egg residue is often left on the pan, and washing is necessary. When scrambled eggs are prepared on a griddle, any residue is simply scraped off. Unless otherwise ordered, scrambled eggs should be soft but not liquid. No white should be evident. Particles of eggs should be uniformly small and tender. Milk, cream or water may be added in amounts no larger than a tablespoon for three eggs. Water makes the eggs more tender, milk and cream, more firm. Water is neutral in flavor; milk and cream have noticeable flavors. The flame under the pan should be lower than that for fried eggs or omelets in order to prevent formation of large lumps of egg.

Before starting work: Plan to use a cast aluminum pan or pan lined with stainless steel or tin. Pan should have bottom diameter of 6 in. Make sure pan is clean with no film of fat or film caused by fat fumes in kitchen. Keep a bowl or dish on hand in which three eggs can be beaten without spillage. If toast is used as a garnish, plan to prepare it under a broiler or in an automatic toaster so that it is ready when eggs are done.

(1) Assemble the following ingredients:
 3 eggs
 Clarified butter
 Salt

(2) Open eggs into small bowl. Add milk, cream or water (no more than 1 tablespoon) if this is the custom in the place you are working. Do not pour milk, cream or water indiscriminately into eggs, but measure it.

(3) Beat eggs with kitchen fork until whites are no longer visible.

(4) Dip tip of fork in salt box. The wet ends of the fork tines will cause a small amount of salt to adhere. Do not overseason. Pepper is not necessary as a seasoning.

(5) Pour half of a No. 1 ladle (equal to 1 tablespoon) clarified butter into pan. Place pan over low flame.

(6) Swirl butter so that bottom and part of side of pan are covered.

(7) Add eggs. Using fork, stir frequently though not constantly, moving eggs as they coagulate. Some cooks prefer to use a flat or basting spoon for stirring. The same spoon may be used for removing eggs from pan. Cook until eggs are soft scrambled. Do not overcook. Eggs will continue cooking somewhat after being removed from fire.

(8) Remove eggs from pan onto warm plate. Shape eggs in an oval mound in center of plate.

(9) Garnish with toast, if ordered, cut diagonally and placed alongside, not underneath, eggs. If necessary, notify waiter to pick up eggs at once while warm.

Scrambled Eggs, Country Style.—Do not beat eggs before cooking. Add whole eggs to pan with clarified butter. Use a moderate to strong flame. Beat eggs in pan so that whites and yolks are separately visible.

Scrambled Eggs, in Quantity.—Scrambled eggs served to large groups are made in advance. Heat butter in saucepan or saucepot set in steam table. Add eggs. Stir frequently with wire whip, scraping bottom and corner of pan, until eggs are soft scrambled. Add milk, cream or water (using no more than 1 tablespoon per 3 eggs) *after scrambling* to keep eggs from coagulating in heavy layers. *Bechamel* sauce (see Chap. 8), made with light cream or half milk and half cream, may be added after scrambling to keep eggs loose rather than bunched. Use 1/2 cup *bechamel* sauce to each 2 doz eggs. Keep eggs warm in a double steam table, that is, the container with eggs should be set in a second container which is in contact with the water in the steam table. Eggs made with *bechamel* sauce do not have the delicate flavor of eggs scrambled to order, but it is the most practical way of handling them for parties where eggs are prepared in advance and must be kept warm until serving time.

Reproduced from: FOOD SERVICE IN INSTITUTIONS by Bessie Brooks West, M.A., Levelle Wood, M.S. and Virginia F. Harger, M.S.; John Wiley & Sons, Inc., New York; Fourth Edition, p. 230.

Eggs are also used in dishes such as egg cutlets, scalloped eggs, and meat and egg scallops. Acceptable standards may be maintained in these dishes when the component parts are well prepared before combining and further preparation processes do not alter the characteristics of the eggs from those given for hard-cooked eggs. Unless slices of hard-cooked eggs are a requirement, fresh eggs may be broken into an oiled counter pan (egg depth not to exceed 2 inches) and cooked uncovered in the steamer to the desired degree of doneness (usually about 20 minutes). The same procedure can be followed for baking in the oven except the pan should be covered and set into a larger pan containing boiling water. Approximately 40 minutes in a 400°F oven should be adequate for hard cooking the eggs after which they can be chopped with the time-consuming task of shelling each egg eliminated.

SCORECARD FOR COOKED EGG PRODUCTS

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability
Hard-cooked					
Poached					
Fried					
Baked					
Scrambled					
Omelet					

Characteristics of a High Quality Product:

Hard-cooked:	White:	Firm, but tender	No discoloration at juncture
	Yolk :	Firm, but not rubbery	
Poached :	White:	Set, but jellylike and opaque	Generally round and compact
	Yolk :	Slightly set and well veiled with light albumin covering	
Fried :	White:	Firm, but not rubbery, free from browning or crisping and bubbles	Generally round and compact
	Yolk :	Set, but not firm	
Baked :	White:	Firm, but not rubbery, free from crisping	
	Yolk :	Set, but not firm	
Scrambled :		Loose, moist, tender rolls of yellow, free from traces of white or evidence of browning	
Omelet :		Light, delicately brown, tender	

Lesson 5

Module I: Breads and Breakfasts

I. Instructor Preparation for Class Activities

A. Duplicate sufficient copies of Handouts
1. Breakfast Cook
2. Using the Griddle
3. Scorecard for Griddle Items

B. Market Order
1. Frozen Waffles
2. Pancake Syrup
3. Sorghum Molasses
4. Banana
5. Fresh Apple
6. Cornmeal
7. Flour
8. Baking Powder
9. Salt
10. Milk
11. Eggs

II. References

A. Kotschevar, L., QUANTITY FOOD PRODUCTION: Boston, Massachusetts; Cohner Books, 1975.

B. Mario, T., QUANTITY COOKING: Westport, Connecticut; AVI Publishing Co., 1978.

C. West, Shugart, Wilson, FOOD FOR FIFTY: New York, N.Y.; John Wiley and Sons, 1979.

FOOD SERVICE EMP EE SHORT COURSE

Lesson 5

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Introduction A. Pour batters- popovers griddle cakes and waffles. . Proportion of flour to liquid (by measure) is 1 to 1. . Basic ingredients: flour, a leavening agent, a liquid, flavoring (sugar, salt, vanilla, spices), fat, eggs B. Nutrient contribution: mainly CHO, Protein, B complex vitamins C. Breakfast Cook	Participants will name basic ingredient in pour batters. Discuss Handout 1 - Breakfast Cook
II. The Griddle 1. Versatility . Meats, eggs, pancakes (griddle cakes), potatoes, french toast, etc. . Set for various temperatures 2. Using the griddle . A heavy flat-top peace of equipment . Heated by gas or electricity. 3. Guides to cleaning and using griddle Handout #2 16 Guides to cleaning and using grill Mario, Quantity Cooking Page 342, 343, 344 4. Review Meat Cookery and identify	Participants will be gathered around grill. Discuss Handout 2 - Using the Griddle Clarify questions Ask for volunteer to light grill and set appropriate temperature for cooking griddle cakes (390° F.), French bread (375° F.) and cornmeal mush (375° F.) Cook breakfast meats left over (fresh-uncooked) from Lesson 4, using preferred method of cookery.
III. Griddle Cakes 1. Adjusting recipe for 1/4th recipe of griddle cakes, Food for Fifty page 122. . Table for adjusting recipes p. 57 Food for Fifty . Directions for adjusting recipes p. 56 Food for Fifty 2. Variety- Crumbled bacon, shaved Ham, Sliced Bananas, drained crushed pineapple, nuts, coconut, chocolate chips, chopped apples, pears, etc. a. Light as sponge cake (angel food cake) b. Fork tender c. Smooth brown crust, not sticky or rubbery. d. Uniformly round.	III. Group I- Adjust Griddle Cake recipe Ask participant how they vary griddle cakes Group I- Prepare Griddle Cakes a. Cook ½ of batter as directed in recipe. b. Beat remaining batter for 2 min. then cook as directed in recipe. c. Label each batch of pancakes d. Keep warm until ready to evaluate quality. e. Distribute scorecards Observe and taste frozen waffle product.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
3. Left-over batter . Cook and freeze (individually) VI. Waffles- . Convenience item- frozen . Cook and freeze in facility- toast and serve . Variety- Peanut butter, creamed chipped beef, Au Gratin asparagus, etc.	16 Guides to cleaning and using grill Clarify questions. Ask for volunteer to demonstrate scraping griddle as if it were in use.
V. French Toast . Known in France as "pain perdu" (Lost bread) . Stale Bread, dipped in egg and milk and browned on grill . Needs to be at least two day old breed . Variety of breads can be used: French Bread Sour Dough Bread Whole wheat, Rye, Texas Thick Bread . Variety of toppings: Syrup, Honey, Jam, Jelly, powdered sugar, p. nut butter, etc. . Standards of High Quality . Moist but not soggy . Evenly browned to a golden hue . Fork Tender . Mild, pleasant flavor . No taste of greasiness	V. Group II- Adjust French Toast recipe to serve 16 portions Page 157 Food for Fifty. Prepare and Cook French toast a. Preheat grill to 375 Degrees and cook 6 slices. b. Preheat Grill to 450 F. and cook 5 slices. c. Preheat grill to 300° F. cook 5 slices d. Label each and keep warm. Class will evaluate and score each of the 3 batches of French toast, griddle cakes and fried mush.
VI. Mush (Cornmeal) . Mush in South is also made of grits . In the East is called "Johnny Cake" (Not named after Johnny Carson) . Convenient- Cook mush day before or keeps several day, then brown on griddly, slices as desired. . Slices dipped in milk, then rolled in flour causes slices to brown beautifully. . Standards of High Quality . Evenly browned to a golden hue . Free from raw corn meal taste . Milk, pleasant flavor . No taste of greasiness	VI. Group III- Use griddle and brown off mush slices. (at 450° F. and 375° F.) ~

5:1

Mario Thomas, QUANTITY COOKING, AVI Publishing Company, Inc., Westport, Connecticut, 1978.

Breakfast Cook

The breakfast menu is the one bill of fare that normally does not change from day to day. Several times during the year, perhaps, modifications may be made on the breakfast menu to include seasonal fruits such as berries, melons, etc. Otherwise the menu and the routines of the breakfast cook are more or less constant even though there are days of the week when the breakfast cook is busier than normal because of increased dining room volume. Frequently the breakfast cook is also the fry cook or may assist the fry cook before and during the midday meal. Almost all hot breakfast dishes, with the exception of hot cereals, are made to order. This means that the breakfast cook is often inundated with short orders that need immediate individual attention. While many of the menu items in a kitchen, such as soups, sauces, braised dishes, etc., are heavily influenced by European tradition, most breakfast dishes in this country are largely American with some English influence. Breakfast egg dishes like omelets and shirred eggs frequently appear on luncheon menus with fillings and garnishes. The ability to master egg cookery, therefore, becomes an asset for the breakfast cook who would advance to the job of fry cook and other higher positions. In some restaurants the breakfast cook is assisted by another worker such as a pantry worker or vegetable cook who may report for work an hour or so before the dining room is open for breakfast. The assistant may preheat equipment, bring water to a boil for coffee, start heating the steam table, receive morning supplies such as bread and rolls, etc. In very large restaurants or institutional feeding establishments, there may be a number of breakfast cooks depending on the dining room or coffee shop volume.

JOB SUMMARY

The breakfast cook (1) consults headwaiter or dining room captain on anticipated or special breakfast attendance; (2) orders and receives from storeroom standard breakfast items such as cereal, eggs, butter, etc.; (3) prepares hot cereals for storage in steam table during breakfast; (4) mixes batter for griddle cakes or waffles, and prepares griddle cakes or waffles to order; (5) mixes batter for French toast and prepares French toast to order; (6) prepares egg dishes such as scrambled, fried, poached, shirred, omelets, etc.; (7) may prepare scrambled eggs in quantity for large groups eating at one time; (8) blanches and finishes bacon; (9) grills and fries ham; (10) fries, grills or bakes sausage; (11) may prepare potatoes such as French fried, hashed brown, home fried, etc.; (12) toasts bread, English muffins or other muffins; (13) sautes corned beef hash, broils lamb chops and prepares other breakfast meat items.

MANUAL PROCEDURES

He (1) boils salted water in saucepans and stirs in cereals; (2) simmers and stirs cereals until done; (3) turns cereals into steam table pots and stores cereals for service; (4) spoons portions of cereal into appropriate dishes; (5) arranges bacon slices in baking pans, and blanches bacon until half cooked; (6) finishes bacon to crisp stage by placing and turning on griddle, in frying pan or under broiler; (7) cuts sausage into separate links, arranges sausages on baking pan, in frying pan, on griddle or under broiler and cooks until half done; (8) finishes sausages when individual orders are received; (9) places thin ham slices under broiler or on griddle and cooks until browned; (10) poaches eggs in water and vinegar; (11) beats eggs for omelets and pours eggs into frying pans; (12) fills, folds and garnishes omelets; (13) melts fat in frying pan or griddle, and fries eggs on one side or turns eggs by flipping or with spatula; (14) mixes eggs with fork or wire whip, pours eggs into frying pans with melted fat and stirs eggs with fork until scrambled; (15) garnishes egg dishes with bacon, ham, sausage, etc.; (16) makes batters from mixes by adding eggs, milk, etc., and reserves batters for griddle cakes; (17) mixes fresh batters by machine or by hand, combining flour, baking powder, salt, sugar, eggs and milk for griddle cakes and waffles; (18) pours batter from pitcher or from ladles onto griddle and onto waffle iron; (19) turns griddle cakes with spatula and stacks griddle cakes or waffles on serving dishes; (20) cuts boiled potatoes with knife and slices or chops potatoes; (21) sautes potatoes; (22) deep fries previously blanched potatoes; (23) sautés corned beef hash; (24) toasts bread or muffins in automatic toaster or under broiler.

EQUIPMENT AND UTENSILS

The breakfast cook uses (1) ranges; (2) broiler; (3) deep fat fryer; (4) mixing machine; (5) griddle; (6) steam table; (7) reach-in refrigerator; (8) waffle iron; (9) frying pans; (10) baking pans; (11) saucepans; (12) wire whips, spatulas, spoons, forks; (13) French knives; (14) measuring containers; (15) dispenser for salt, pepper, etc.

WORKING CONDITIONS AND HAZARDS

He (1) works under considerable pressure in front of ranges, griddle, steam table, broiler and deep fat fryer; (2) is subject to burns from sputtering fat.

PLACE IN JOB ORGANIZATION

The breakfast cook may be promoted from short order cook, counterman or pantry worker. He may eventually become fry cook or broiler cook.

USING THE GRIDDLE

The special piece of equipment which the breakfast cook must be able to use skillfully, and which other cooks may or may not use, is the griddle. It is widely found in coffee shops, breakfast shops and counter restaurants where much of the cooking takes place immediately adjacent to the serving area or in view of the customers. It is a heavy flat-top utensil with its source of heat, either gas or electric, beneath the top plate. For making griddle cakes, it is the only satisfactory piece of equipment. It may be used for certain egg dishes, ham, bacon, sausage, etc. Normally heavy-duty kitchen equipment such as ranges, steam tables, etc., are cleaned by a kitchen helper. Keeping the griddle clean, however, is important during as well as after its use, and is usually the responsibility of the breakfast cook.

16 GUIDES TO CLEANING AND USING THE GRIDDLE

(1) Any griddle which is new or has not been used for a long period, such as one in a seasonal resort kitchen, and which is covered with a grease coating to prevent rust, must be carefully cleaned with a grease-dissolving solution.

(2) Before a griddle can be used, it must be "seasoned"—that is, a film of fat must be applied in such a way that a nonstick surface covers the griddle. After a griddle has been in use for several meals or for an entire day and is thoroughly cleaned, it must be reseasoned.

(3) To season a griddle, follow these steps:

- (a) Set the temperature at 400° F and preheat griddle.
- (b) Pour unsalted shortening or oil onto griddle, using enough to coat entire surface.
- (c) Spread shortening over entire surface with a heavy clean towel, a fat mop or brush.
- (d) Allow shortening to remain until it smokes.
- (e) Wipe griddle clean.
- (f) Repeat steps (b) to (e) at least two times, wiping well after each application. Griddle is now seasoned.
- (g) If some small spots on griddle later seem to cause food to stick, scrape them with a spatula, and reapply shortening as above.

(4) Griddle should be scraped after individual orders or batches of food have been cooked to remove food particles or residue. Scrape with edge of spatula. Remove food particles, and scrape fat toward rim of griddle to drain off. Wipe rim of griddle if all fat does not flow off.

(5) At the end of the shift or the end of the day, clean griddle for the next meal, following these steps:

- (a) Set temperature of griddle at 150° F.
- (b) Scrape off any remaining food or residue.
- (c) Pour griddle-cleaner solution onto surface, using quantities suggested by manufacturer. Spread with cloth so that entire griddle is covered.
- (d) Let solution stand 5 min.
- (e) Scrape solution to rim of griddle to run off. Wipe griddle dry.
- (f) Pour hot fresh water onto griddle to rinse and remove cleaning solution.
- (g) Scrape water to rim of griddle. Wipe dry with clean cloth.
- (h) Reseason griddle as described previously.

(6) Once a week or more often if necessary, rub surface of griddle

Mario, Thomas, Quality Cooking, AVI Publishing Company, Inc., West
Connecticut, 1978.

with griddle stone, following grain of metal. This removes any residue remaining after routine cleaning and leaves a fresh griddle top. It must be reseasoned as previously described before using again.

(7) Always preheat the griddle to the designated temperature considered best for the specific food to be cooked. Eggs, for instance, should be fried on the griddle at 300° F, bacon at 350° F, and griddle cakes at 390° F. Incorrect temperatures will give poor results.

(8) Make a note of any area of the griddle where the heat distribution may be irregular, that is, cause spotty cooking or uneven browning. Cook the food in such areas for a longer or shorter period than usual. Modern griddles with good performance characteristics provide even heat throughout the griddle.

(9) Uneven browning or abnormal cooking will occur if the temperature setting is incorrect. During a busy breakfast period, controls may be inadvertently set to improper temperatures. Make corrections if necessary. If an unusual heat response continues, report this fact to your instructor or supervisor. Thermostats may need correction or replacement.

(10) Large griddles are usually fitted with controls allowing different temperatures in different sections of the surface. Use whatever settings are necessary for efficient operation during busy and slack periods.

(11) Remember that scraping the griddle during its use is not only necessary for sanitary reasons but to prevent flavor transference from one food to another. A dish of plain scrambled eggs should not convey the flavor of sausage or other food previously cooked on the griddle.

(12) Use a long offset spatula for turning most foods. Wipe the spatula clean after each use. Do not attempt to turn large pieces of food with a small spatula intended for small portions.

(13) Check the accumulated fat in the removable tray beneath the griddle and empty it as often as necessary. It should be cleaned daily.

(14) When a large batch of cold food is placed on a griddle, its temperature will drop precipitously. In a well-constructed griddle the recovery period will be rapid. As the breakfast cook, however, you must anticipate such temperature variations. A griddle which is fully loaded at one time will suffer a greater heat loss than a griddle on which individual orders are placed periodically. Govern the cooking time accordingly.

(15) Foods which tend to run, such as beaten eggs, require more griddle space than compact foods such as whole eggs, bacon, etc. Allow this larger area to prevent different foods from mingling.

(16) Although the surface of a griddle is made of hard metal, it can be dented or impaired with the careless use of utensils. Do not strike it with the side of a spatula. When scraping the griddle, move the spatula with slow even pressure; don't hit the griddle surface. Do not use steel wool or coarse metal scrapers for cleaning.

SCORECARD FOR GRIDDLE ITEMS

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability
Griddle Cakes					
French Toast					
Mush (Cornmeal)					

Characteristics of a High Quality Product:

Griddle Cakes:	Light as sponge cake (angel food cake) Fork tender Smooth, brown crust, not sticky or rubbery Uniformly round
French Toast :	Moist, but not soggy Evenly browned to a golden hue Fork tender Milk, pleasant flavor No taste of greasiness
Mush (Cornmeal):	Evenly browned to a golden hue Free from raw corn meal taste Mild pleasant flavor No taste of greasiness

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 6

Module I: Breads and Breakfasts

I. Instructor Preparation for Class Activities:
   A. Duplicate sufficient copies of Handouts:
      1. Breakfast Cookery--Production Sequence
      2. Cooking Breakfast Cereals
      3. Scorecard for Cooked Cereals
      4. Evaluation of Short Course
   B. Duplicate sufficient copies of Recipes: Bulgar Wheat, Farina (Cream of Wheat) and Brown and White Rice
   C. Market order for: Brown rice, white rice, oatmeal--old fashioned and instant variety pack, Farina, Bulgur, salt
   D. Cook cereal- Cover one pan of cereal and leave uncovered another pan to demonstrate deterioration of quality.
   E. Have available a copy of Food for Fifty to use as reference.
   F. Be sare a blackboard, chalk and eraser is available.
   G. Assemble wooden spoon, wire whips, oatmeal and cooking pan for demonstration.

II. The following references provide more information on the subject of this lesson:

Morr, M.L., & Irmiter, T. Introductory Foods, New York, Macmillan Publishing Co., Inc.

Jernigan, A.K., Judge, J., and Spellman, M. Food Preparation Study Course. Ames, Iowa, Iowa State University Press

Kotschevar, L.H., Quantity Foods Production, Boston, Mass.,Cohners Book International Inc.

West, Wood, Harger, and Shugart, Food Service in Institutions 5th Edition, New York, John Wiley.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Cereals 1. Define- Seeds of the grass family and are used to make breakfast foods, starches, flours, breads and pastes	1. Ask participant to define cereal. Name a starch made from cereals. Also name a paste not from cereals.
2. Nutrient Contribution: . economical source of energy . significant source of protein . whole grain- source of trace minerals and B vitamins	2. Participant discuss nutrient contribution of cereals.
3. Principles of Cereal Cookery . Mainly starch- starch cookery . Cook to improve palatability and rate of digestion . Water and heat and starch-- Gelatinization (swelling of starch granules to form vixcous mass). . Starch will not dissolve in cold water. . Factors that determine cooking time: a. fineness of the cereal grind b. amount of bran and cellulose . smaller size particle will cook more rapidly because more surface area is exposed c. presence of other substances in addition to starch d. some cereals have been preheated and/or reduced in particle size, so cook quickly . Melted fat separates starch granules . Gelatinized starch in cereals and rice tends to be sticky . Gelatinization of starch in cereal, rice and paste products causes an increase in volume. . Dextrinization of starch reduces amt. of gelatinizatin. . Products high in starch tend to be bland in flavor . Vitamins and minerals used to enrich rice, cereals, & paste product are water soluable. . Gelatinized starch exposed to air becomes crusty as water evaporates.	3. Ask class to describe how cornstarch or flour is added to meat juice to thicken it for graby. Relate that to how cream of wheat is cooked. a. Refer to page 270. Food for Fifty. (Time differences for cooking various cereals. b. Ask participants for samples: . Quick cooking and instant oatmeal, cream of wheat, and etc. . Demonstrate volume of ½ cup rice before and after cooking. . Show participants cream of wheat after cooking and left uncovered.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
4. Cooking Equipment . pot on top of stove . steam- jacketed kettle . steamer wire whip is used for mixing	4. Ask participants to describe cereal cookery at home. Ask participants if home method would be appropriate for quantity cookery.
5. General Suggestion to apply in cooking all cereal: A. Steps in Cooking . Add cereal slowing to boiling water (cooking starts immediately shortens cooking time) . Add salt- brings out flavor. . Add small amount of fat- separates starch granules, prevents sticking . Add cereal gradually so that water continues to boil- prevents lumps from forming. . Stir with wire whip during early part of cooking- exposes all surfaces evenly. . Do not stir excessively- over stirring breakdowns cooked cells and causes sticky gummy mass	5. Participants will discuss the why of each step in cooking
6. Standards of High Quality . No pasty appearance or taste, distinct particles, granules or flakes. . Just moist enough to hold shape in bowl when served . Free from lumps . Bland flavor free from raw starch taste . Enough salt to bring out flavor, but no salty taste	6. Participants will describe a high quality product.
7. Recipes- Preparation of Cooked Cereals . Proportions of Cereal to Water-- 1 lb. cereal to one gallon water . Follow cooking directions on package	7. Refer to page 189 Food for Fifty Group I Cook Bulgur Wheat Group II Cook Cream of Wheat Group III Cook White Rice Cook Brown Rice
8. Taste cooked cereal- Participants describe quality of oatmeal cooked with minimum stirring and over- stirring.	Demonstrate oatmeal cooked with over-stirring compare with over cooked, over-stirred.
9. Class Activity- Participants discuss the effects on nutrient quality caused by rinsing rice and paste products.	Compare cooking time of Bulgur and cream of wheat.

FOOD SERVICE EM[illegible]YEE SHORT COURSE

Lesson 6

Module I: Breads and Breakfasts

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Considerations in breakfast menu planning:	•Refer to Food for Fifty pages 541-547
A. Factors relating to clientele 1. Age, sex, occupation 2. Climate and Season 3. Flavor and appearance of Foods 4. Variety	•Each participant is to list a minimum of three factors that influenced what he/she ate for breakfast.
B. Factors relating to management 1. Type foodservice 2. Number to be served 3. Budget 4. Equipment 5. Number and experience of employees 6. Distribution of work. 7. Availability and seasonability of foods 8. Food on hand 9. Recipes	.Use Dairy Council food models to demonstrate variety in color, texture, fiber, sodium, protein and fat.
C. Menu pattern or meal pattern 1. Established by regulation- School breadfast 2. Established by clientele preference 3. Established to meet certain nutrient requirements . 1/3 daily needs . a minimum of three food groups represented in menu . all food groups represented . diabetic, Sodium restricted diet . obesity- Eating fast contributes to obesity. . Modify menu so that "eater" would need to take more time to eat. . Modify food preparation methods to lower calorie content & food. . Modify menu to reduce sodium content.	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
II. Unique features of breakfast meal. 1. Food is cooked to order 2. Food takes short amount of time to prepare 3. Food should not be prepared in advance and held on steam table (Note: The food loses quality at room temperature and will lose appetite appeal.) 4. Customers want to eat quickly (Note: Breakfast is not a conversation meal and some customers often have a limited time.) 5. Many condiments are served 6. Food must be served hot 7. Breakfast may be eaten any time of the day.	II. Participant lists on blackboard some features that makes breakfast unique.
III. Continental breakfast 1. Is a light breakfast a. Fruit or juice b. Toast or pastry c. Coffee 2. Requires no cooking 3. Is becoming very popular a. Motels b. Hotels c. Restaurants	III. .Discuss continental breakfast. .Discuss five meal plan,in some institutions one meal was a continental breakfast.

LESSON CONTENT

IV. Common or Traditional breakfast foods

1. Eggs
   a. Scrambled
   b. Fried
   c. Poached
   d. Hard or soft cooked
   e. Omelet
2. Pancakes
3. Waffles
4. Bread
   a. Plain toast
   b. French toast
   c. Cinnamon toast
   d. Biscuit
   e. Muffin
5. Potatoes-Hash browns
6. Cereal
   a. Hot
   b. Cold
7. Fruit or juice
8. Entree
   a. Bacon
   b. Sliced Ham
   c. Sausage
      - Link
      - Patty
9. Pastry
   a. Donut
   b. Sweet roll
   c. Coffee cake
10. Beverage
   a. Milk
   b. Hot tea
   c. Coffee
   d. Hot chocolate

CLASS ACTIVITY AND EVALUATION

Participants will name some foods which they commonly eat at breakfast

- Food modules demonstrating common and uncommon breakfast items.

Will evaluate:
Is breakfast monotonous? Colorful?
Or in Protein, fat, fiber, sodium, sugar?

Which foods groups are commonly omitted at breakfasts included at breakfasts?

Ask students to name factors which influenced the traditional and untraditional breakfast which they planned.

Plan a traditional and a not-traditional menu.
- Include a menu item from each of the four food groups.
- Identify food items that do not fit into food groups (four).

LESSON CONTENT

V. Uncommon or non-traditional breakfast Foods- Soup, watermellon, cold leftover pizza, leftovers from dinner, etc.

VI. Preparation

1. Break eggs for
   - Scrambled into-Large container
   - Fried into individual cups
   - Omelet into individual cups
2. Prepare batters
   - Pancakes, waffles, french toast mixture
3. Cook hot cereal
4. Portion fruits
5. Pan entrees
   - a. Place meat on pans for cooking
   - b. Place pans in oven (Note: Meat may be panned in evening before breakfast. Meat may be cooked in oven, on grill, or in fryer. Some menus call for meats to be cooked to order.
6. Warm plates

VII. Timing
1. All food at proper temperature at service time.
2. Serving plate: Preheat to help keep food hot, serve as soon as possible.

GOAL: Hot food items complete cooking at about same time.
Answers to assignment sheet or Handout #1

1 Make coffee
4 Fry bacon- 10 minutes
5 Prepare eggs- 4 minutes
3 Pour juice
6 Make toast- 2 minutes
7 Plate bacon, eggs, toast
2 Prepare hot cereal- 30 minutes

CLASS ACTIVITY AND EVALUATION

What preparation is done in their facility?
Home?

Handout #1- Assignment Sheet #1- Arrange in order production sequence for a breakfast meal.

If time permits: Each participant will arrange breakfast items of menu hes planned into the proper production sequence.

BREAKFAST COOKERY--PRODUCTION SEQUENCE

Arrange in order the proper production sequence for this breakfast meal. Place a "1" in front of the first step, a "2" in front of the second, and so on.

_______ Make coffee

_______ Fry bacon--10 minutes

_______ Prepare eggs--4 minutes

_______ Pour juice

_______ Make toast--2 minutes

_______ Plate bacon, eggs, toast

_______ Prepare hot cereal--30 minutes

COOKING BREAKFAST CEREALS

The job of making hot breakfast cereals follows a pattern no matter what brand of cereal is prepared. Raw or partially cooked cereals are cooked in salted water until the water is absorbed, the starch is cooked and the cellulose is softened. Directions for cooking are printed on the package, and include the ingredients, method of cooking and yield. The student, however, should be familiar with the three common methods of cooking no matter what package directions are indicated. The three procedures are as follows:

(1) Raw cereal may be combined with *all* the cold water indicated in the recipe, slowly brought to a boil while stirring, and simmered until done.

(2) Raw cereal may be mixed with *part* of the cold water and set aside. The balance of the water is brought to a boil, at which point the cereal mixture is stirred into it and simmered until done.

(3) *All* of the cold water is brought to a rapid boil; the dry cereal is then slowly stirred into it and simmered until done.

Although methods (1) and (2) avoid lumpiness, method (3) seems to be the one most widely preferred by breakfast cooks. Some cereals are so-called "quick cooking," meaning they have been partially cooked during processing. Those not indicated as quick cooking are preferred by some chefs because of the lighter, smoother texture and mellow flavor that results from long, slow simmering. Although cooking breakfast cereals is considered one of the easiest jobs in the kitchen, it has some hazards for beginner cooks. Five common faults and ways of correcting them are listed.

(1) *Lumpiness:* When raw dry cereal is carelessly added to boiling water without proper stirring, those starch granules in immediate contact with the water form a viscous mass, trapping uncooked particles inside. These uncooked particles (lumps) remain, no matter how long the cooking continues. The remedy is to disperse the starch granules before lumps form. The cook should:

(a) Hold a wire whip at the middle of the pot below the surface of the water

(b) Stir the water with the whip, while very slowly pouring the cereal where the whip is agitating the water, and

(c) Continue to slowly add the cereal while stirring vigorously until all the cereal has been added.

(2) *Stickiness:* This is a major fault with oatmeal. It is usually caused by excessive stirring after the cereal has been thickened. When cereal is first added to water, it settles to the bottom, and a layer of water remains on top. During this brief period, as the cereal is swelling and absorbing water, it should be stirred until the water and cereal form into a thick homogeneous mass. At that point, stirring should be drastically reduced. The cereal should be cooked over a low flame until done, stirring only occasionally to make sure there is no bottom sticking. In some kitchens, after the cereal is thickened, it is transferred to the steam table for slow cooking and a minimum of stirring.

(3) *Excessive thickness:* After the cereal has been completely cooked and has been standing in the steam table for an hour or more, the starch sometimes continues to swell and cause undue thickness, just as certain sauces or soups standing in the steam table become thicker in time. If this occurs, the cereal should be carefully thinned with a small addition of boiling water stirred into the cereal, using only as much water as necessary to restore the cereal to its original consistency.

(4) *Skin:* If hot cereal remains in the steam table for long periods without being served or stirred, it may develop a thick skin on top. To avoid it, keep the steam table pot or inset tightly covered except when serving.

(5) *Burnt flavor:* Scorching will occur if the thickened cereal is kept over a flame which is too high. If a steam-jacketed kettle is used for cooking, reduce the heat drastically as soon as the cereal has been added to the boiling water. Check the bottom of the pot or kettle with a spoon or paddle to make sure cereal is not sticking during cooking. If cereal is sticking, but is not scorched, empty it into a clean pot without scraping bottom.

Ratio of Cereal to Water

Many breakfast cooks prepare cereal without reference to any recipe. The general guidelines which they follow remain constant no matter what brand of cereal is used. Oatmeal normally requires twice as much water as oats by volume, not weight. Thus if the cook fills a gallon measure with rolled oats, he will need two gallons of water to make oatmeal. For making cracked wheat cereals such as Wheatena, a gallon of the cereal will require four gallons of water. For making fine granular cereals such as farina or cornmeal, a gallon of the cereal will require five to six gallons of water. Each cereal requires a tablespoon of salt per gallon of water.

From: Quantity Cooking by Thomas Mario. AVI Publishing Company, Inc., Westport, Connecticut, 1978.

SCORECARD FOR COOKED CEREALS

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability
Cooked Cereals					
Cooked Rice					

Characteristics of a High Quality Product:

Cooked Cereals: Appearance: Distinct particles, granules or flakes
Consistency: Thick; somewhat viscous (without gumminess)
Flavor: Bland (cooked starch); typical for grain (wheat, corn, oats); well-rounded (no raw starch)
Tenderness: Not evaluated for this product
Mouth Feel: Particles remain discreet; soft

Cooked Rice: Appearance: Grains intact; white, translucent
Texture: Grains firm, but tender; fluffy
Flavor: Bland

This is what I learned at this workshop:

This is how I'll use what I learned on my job:

Next Time, I hope you will:

(over for more space)

KANSAS DEPARTMENT OF VOCATIONAL EDUCATION

FOOD SERVICE EMPLOYEE SHORT COURSE

Module II: Meats and More

I. Overall Goal:

Using the information learned in this short course, each participant should be able to select, prepare, and serve protein foods (meats, poultry, fish, meat salads, variety meats) in quantity by approved methods to conserve their nutritional value, flavor, and appearance.

II. Plan of Procedure:

A. Participants: Food service employees from schools, nursing homes, hospitals and other institutions will be invited to attend.
B. Prerequisites: Some experience in quantity food production is desirable.
C. Learning Strategy: Presentation of the course will be by lecture, demonstrations, actual "hands-on" class activities, and audio-visual materials. Handouts will be distributed at most sessions.
D. This module on Meats and More will consist of the following topics:

Class 1:	Meats--Their Composition, Nutritional Value, Selection, and Preservation
Class 2:	Meats--Principles of Moist Heat Cookery
Class 3:	Meats--Principles of Dry Heat Cookery
Class 4:	Principles of Poultry Cookery
Class 5:	Principles of Fish Cookery
Class 6:	Preparation of Main Dish Salads and Variety Meats

III. Behavior Objectives:

At the completion of this short course, each participant should be able to:

Class 1: Meats--Composition, Value, Selection and Preservation

1. Write a definition for meat and define key words--gelatin, shrinkage, braise, stew, etc.
2. List 3 characteristics of good quality to consider in purchasing beef and in purchasing pork.
3. Describe 4 factors that affect the texture and tenderness of meats.
4. Tabulate 4 objectives for cooking meats.
5. List appropriate methods of cookery for various cuts of meat.
6. Provide guidelines for the corfect procedures for storing and thawing meats.
7. Describe meat cookery methods that are energy efficient.

Class 2: Meats--Principles of Moist Heat Cookery

1. Explain and contrast the dry heat method of meat cookery and the moist heat method of meat cookery.
2. List 6 basic methods of cooking meat and identify as moist or dry heat method.
3. List 3 ways of tenderizing meats in addition to the use of moist heat.
4. Discuss the methods for steaming, braising, stewing, simmering meats.
5. Test the meat for doneness.

Developed cooperatively by Occupational Home Economics, Kansas Department of Vocational Education, Wichita Area Vocational-Technical School and members of the Kansas Dietetic Association.

An equal employment/educational institution.

Class 3: Meat--Principles of Dry Heat Cookery

1. Explain the acceptable procedure for roasting meats including correct roasting temperatures and degree of doneness.
2. Discuss the methods for roasting, broiling, frying, panfrying (saute) meats.
3. Read and use meat timetables.
4. Slice and portion a beef roast to yield portions planned.
5. Select suitable grades and cuts of meat for dry heat cookery.
6. Use a meat thermometer correctly.
7. List reasons for meat shrinkage and how shrinkage may be prevented.

Class 4: Principles of Poultry Cookery

1. Define the term "grading" of poultry
2. Quality refers to the degree of excellence of poultry. Itemize 3 factors for determining such quality in poultry.
3. Name the basic principle that must be followed in the cookery of poultry and list 2 reasons for this principle.
4. Demonstrate the proper methods for thawing a frozen chicken.
5. Name 6 ways in which poultry may be cooked and describe each method as moist or dry heat.
6. Explain the acceptable procedure for roasting temperature and degree of doneness for poultry.

Class 5: Principles of Fish Cookery

1. Given a list of fish cookery methods, pick out the 2 most often used and tell how doneness is determined in these methods.
2. Describe how to poach fish fillets.
3. List 3 general principles of fish cookery.
4. Evaluate prepared fish.
5. Demonstrate the ability to prepare, garnish and attractively serve fish.

Class 6: Preparation of Meat Salads and Variety Meats

1. Have a better knowledge of the nutritional contribution of variety meats in the diet.
2. Explain why low temperature in liver cookery are important.
3. Suggest 3 ways to prepare, garnish, and attractively serve liver for better acceptance by the public.
4. Demonstrate the ability to prepare and creatively display main dish and meal-in-one salads.
5. Demonstrate safe and sanitary procedures in the preparation and holding of main dish salads.
6. Have knowledge of the nutritional contribution of various main dish and meal-in-one salads.
7. Have knowledge of the wide variety of ingredients which may be used in main dish salads.

IV. Evaluation

Each participant will use scorecards at each session to evaluate products produced. These will be reviewed with the instructor. Leading questions based on information presented in the session will be asked at this time to assess knowledge gained and clarify points presented.

V. Certificate of Course Completion

Each participant will be issued a certificate of satisfactory completion if all six classes were attended.

VI. Expected Outcome

Participants will become more aware of their valuable and vital role on the health care team by providing nutritious and appealing meals to the residents (patients) in their facilities as an aid to their well-being.

DEFINITIONS OF TERMS

1. Bake - to cook by dry heat (usually in an oven) on heated metals. (Baking means the same as roasting when applied to meat cookery.)

2. Baste - to moisten meat or other food while cooking in order to add flavor and to prevent drying of the surface. (The liquid is usually fat, drippings, water, or water and fat.)

3. Beat - to make a mixture smooth or introduce air by using a brisk regular motion to lift the ingredients over and over.

4. Blanch - to precook or pretreat in boiling water or steam or possibly in fat. Blanching is used to:
    a) aid in removing skins from fruits and nuts
    b) precook in deep fat without browning as a first step in preparing french fried potatoes.

5. Blend - to thoroughly mix two or more ingredients. (This is often done with a mixer at low speed.)

6. Boil - to cook in a liquid (water or mostly water) in which the bubbles are breaking on the surface and steam is being given off.

7. Braise - to brown meat or vegetables in a small amount of fat, add a small amount of liquid, cover tightly and cook slowly. (The liquid may be water, milk, cream, or meat stock.)

8. Bread - to coat with bread crumbs or cracker meal, or to coat with crumbs, then with lightly diluted egg, and again with crumbs.

9. Broil - to cook by direct heat; grill.

10. Caramelize - to heat sugar or food containing sugar until a brown color and characteristic flavor develop.

11. Chop - to cut food into fairly fine pieces with a knife or other sharp tool.

12. Cream - to mix one or more foods, such as fat and sugar, to incorporate air.

13. Dredge - to sprinkle, dust, or coat with flour or other fine substance.

14. Fold In - to combine ingredients, while retaining incorporated air, by cutting carefully down through the mixture with an implement, sliding the implement across the bottom of the mixing bowl, and turning the mixture over in this manner several times.

15. Fricassee - to cook by braising. (This term is usually applied to fowl, rabbit, or veal which is cut into pieces.)

16. Fry - to cook in hot fat. (Cooking in a small amount of fat is called pan-frying; cooking in a deep layer of fat is called deep-fat frying.)

17. Grill - to fry on a griddle; saute or toast.

18. Julienne - anything cut in long match-like strips.

19. Knead - to work a dough with a pressing motion by folding and stretching to develop gluten.

20. Lard - to insert strips of fat into or on the top of uncooked lean meat, poultry or fish to give flavor and prevent dryness.

21. Marinate - to treat with a marinade (an oil-acid mixture) which is usually like a salad dressing. (The process imparts flavor, and when used with meats, some tenderizing action takes place.)

22. Melt - to liquefy by the application of heat.

23. Mince - to cut or chop food into very small pieces.

24. Mix - to combine ingredients in any way that effects even distribution.

25. Mold - to form dough or other mixtures into loaves or other desired shapes or to place a gelatin mixture into a mold to gel.

26. Pan-Broil - to cook uncovered on a hot surface (usually a frying pan); the fat is poured off as it accumulates.

27. Parboil - to boil until partially cooked. (The cooking is completed by another method.)

28. Pare - to cut off the outside covering (usually with a knife).

29. Peel - to remove or strip off the outside covering (usually with a knife).

30. Puree - to finely strain fruits or vegetables.

31. Roast - the same as to bake. (The term is mostly applied to meats.)

32. Roux - to mix an equal portion of fat and flour.

33. Sanitize - to destroy microorganisms. (For culinary purposes, this is most often done at a temperature of 180°F or by chemicals.)

34. Saute - to cook in a small amount of fat. (This process is also called pan-frying.)

35. Scald - to heat a liquid to just below the boiling point.

36. Shred - to tear or cut into small, long narrow strips (similar to sliver).

37. Simmer - to cook in a liquid just below the boiling point, i.e., 185°F to 210°F. (The bubbles form slowly and break below the surface.)

38. Sliver - to cut or shred into small pieces.

39. Steam - to cook in steam with or without pressure.

40. Stew - to simmer in a large quantity of liquid. (When applied to meat, a simmering temperature is maintained.)

41. Stir - to mix food materials with a circular motion in order to blend or to secure a uniform consistency.

42. Stock - the liquid in which meat, poultry, fish, or vegetables have been cooked.

43. Toast - to brown by means of direct heat.

44. Whip - to beat rapidly to produce expansion due to incorporation of air (applied to cream, eggs, gelatin mixture).

45. Marbling - fat inside of meat

46. Covering - fat outside of meat

47. Aging - natural tenderizing and flavoring of meat

48. Shrinkage - loss of meat and wieght caused by dehydration of the food product during cooking

49. Connective tissue - fibers which hold the meat tissue together

50. Gelatin - animal protein taken from the collagen connective tissue

51. Protein - the "building blocks" needed by the body to replace worn-out cells

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1: Meats: Their Composition, Nutritional Value, Selection and Preservation

Module II: Meats and More

I. Instructor preparation for class activities

A. Prepare copies of student handbooks

B. Obtain sufficient copies of "Basics About Beef"--available free from Kansas Beef Council, 2044 Filmore, Topeka, Kansas 66604, phone (913)-232-9358

C. Have on hand copies of Food for Fifty for students to purchase if needed

D. Prepare color-coded name tags dividing class into 4 groups of 3-4 participants each

E. Duplicate sufficient copies of handouts
   1. Goals and Behavioral Objectives
   2. Definitions of Terms
   3. "Basics About Beef"--see above
   4. Pork Chart
   5. Points to Remember When Cooking Beef
   6. Cooking and Storing Meat and Poultry

F. Order sufficient copies of "Cooking Meat in Quantity", National Livestock and Meat Board, Department of Home Economics, 444 North Michigan Avenue, Chicago, Illinois 60611

II. References which will provide more information on the subject of this lesson

A. Kotschevar, Lendal H., Ph.D.: Standards, Principles, and Techniques in Quantity Food Production, 3rd Edition Boston: Cahners Books International, Inc., 1974.

B. Mario, Thomas: Quantity Cooking, Westport, Connecticut: AVI Publishing Company, Inc., 1978.

C. Powers, Jo Marie: Basics of Quantity Food Production, John Wiley and Sons, 1979.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1 Meats: Their Composition,
Nutritional Value, Selection and
Preservation

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Presentation of name tags and get-acquainted activity A. Complete enrollment procedures B. Provide students with folder of materials	Color-coded name tags for dividing class into 4 groups of 3-4 participants each for future team activities Get-acquainted activity: Each one introduces self and place of employment and tells his favorite protein dish. Chairs are arranged in a circle
II. Orientation to the facility A. Building rules B. Bathroom location	Tour kitchen
III. Orientation to the course--see handouts A. Purpose of short course B. Meeting place and times	Hand out copies of student handbook
C. Dress and conduct codes and handwashing procedure D. Basic organization of course	Class discussion regarding sanitation, kitchen and work areas and rules for equipment usage
E. Goals and objectives	Handout 1: Goals and Objectives
F. Optional text: Food for Fifty, 6th Edition, West, Shugart and Wilson, John Wiley and Sons, 1979	
IV. Topic of Lesson 1: Meats: Their Composition, Nutritional Value, Selection and Preservation A. Meats 1. Definition of meat 2. Glossary of terms	Handout 2: Definitions of Terms
B. Composition of meat 1. Nutritional value to diet 2. Effects of cooking on food value	Handout 3: "Basics About Beef"

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1 Meats: Their Composition,
Nutritional Value, Selection and
Preservation

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
C. Factors affecting texture and tenderness 1. Structure cell walls--cut of meat, age, development 2. Connective tissue--collagen and elastin 3. Nutrition of animal 4. Ripening process	
D. Selection of meat 1. Economy 2. Menu planning 3. Cooking time 4. Intended use	See pages 3-7--"Basics About Beef"
E. Guides to meat buying 1. Federal inspection--round stamp guarantees wholesomeness 2. Grading--shield-shaped stamp indicates grade or quality 3. Appearance	See page 3--"Basics About Beef"
F. Characteristics of good quality 1. Beef--bright, cherry-red color; good marbling of fat; cut surface velvety; firm grain; red, porous bones 2. Pork--pinkish-white color; well-marbled with fat; firm flesh; bones with slight tinge of red	See "Beef Cuts", pages 8 and 9--"Basics About Beef" See Handout 4: Pork Chart
G. Guides to meat care 1. Preservation and storage 2. Thawing 3. During preparation 4. During serving period	See pages 3 and 4--"Basics About Beef" Demonstrate and discuss proper and improper techniques of thawing ground beef in the refrigerator, at room temperature, in warm water, in cold water and in the microwave
H. Basic principles of meat cookery 1. Protein coagulation 2. Tenderness of meat cut 3. Temperature control a. Shrinkage b. Cooking temperatures c. Use of meat thermometer d. Factors affecting cooking time	See page 253--Food for Fifty Handout 5: Points to Remember When Cooking Meat in Quantity--National Livestock and Meat Board See time tables for meat cookery, pages 255-259--Food for Fifty Show several different kinds of meat thermometers which are suitable for meat cookery

FOOD SERVICE EMPLOYEE SHORT COURSE

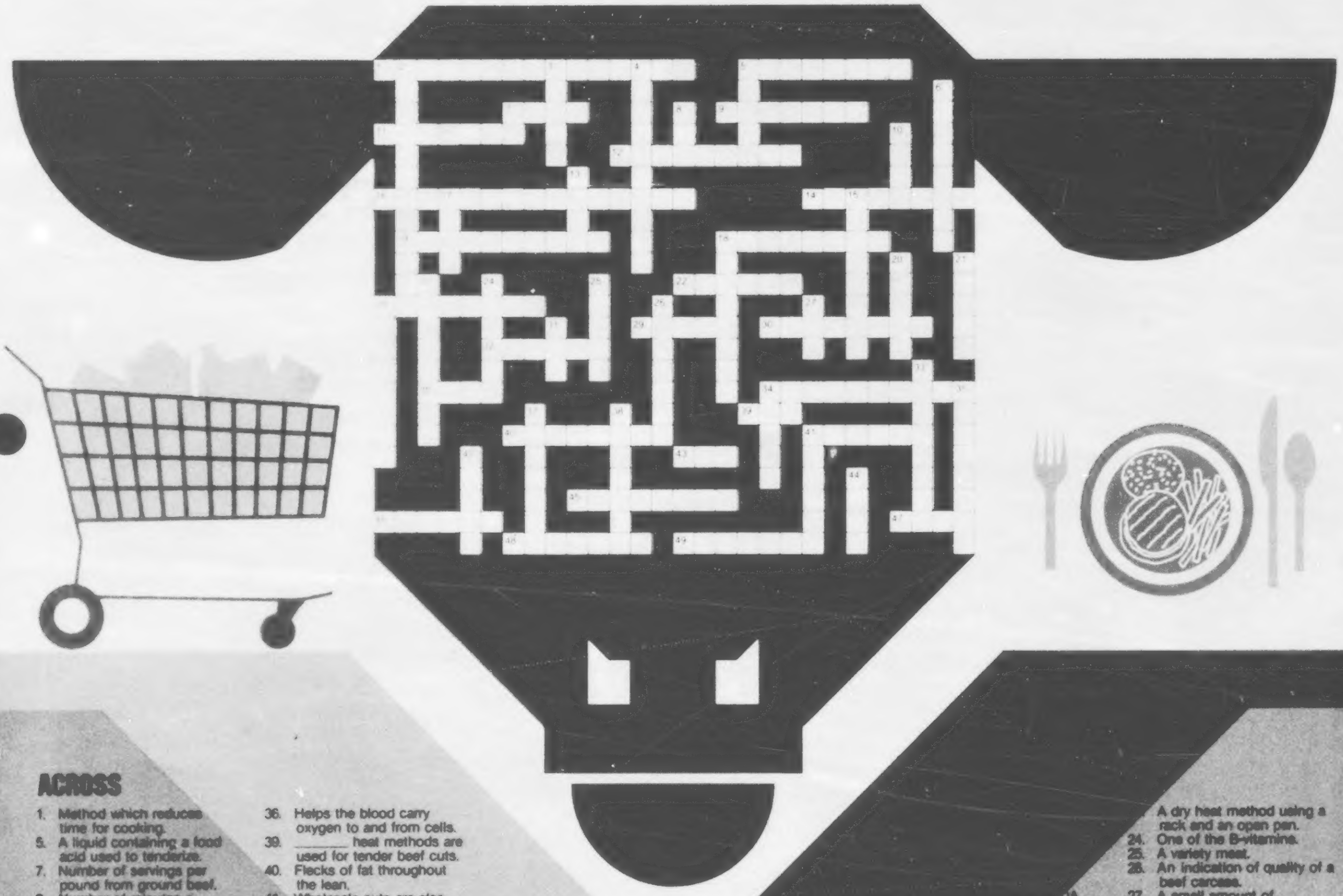
Lesson [illegible] Meats: Their Composition, Nutritional Value, Selection and Preservation

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Moist heat--less tender cuts of meat 1. Steaming--page 264 2. Braising--page 263 3. Simmering--page 264 4. Stewing--page 265 } Food for Fifty J. Dry heat--tender cuts of meat 1. Roasting--page 253 2. Broiling--page 260 3. Panfrying (sauteing)--page 262 4. Frying--page 262 } Food for Fifty 5. Stir frying	See pages 252-265: Food for Fifty See pages 10 and 11: "Basics About Beef" Handout 6: Cooking and Storing Meat and Poultry See pages 4 and 5: "Basics About Beef"
V. Viewing of film or filmstrip. Discussion	Suggested films: Film: FS-131--"Roasting", 10 minutes, color; National Educational Media, Inc., Encino, California 91436 (Basic method in step-by-step procedure) or Filmstrip: S-820--"Roasting Meats and Poultry", 82 frames, 8 minutes, color; National Educational Media, Inc. (Basic methods in step-by-step procedure. Includes proper use of racks, pans and oven. Tips on quantity roasting, basting, time, temperature and use of thermometer) or Filmstrip: "How to Cook Meat"; National Livestock and Meat Board, Department of Home Economics, Chicago, Illinois 60009
VI. Assignment for next lesson: Bring your favorite recipe for meat using moist heat cookery	
VII. Introduce next lesson and prepare market order	

BASICS ABOUT

BEEF



ACROSS

1. Method which reduces time for cooking.
5. A liquid containing a food acid used to tenderize.
7. Number of servings per pound from ground beef.
9. Number of minutes a roast should set before carving.
11. Cut often used for corned beef.

Beef that usually should ot be refrozen.

orm program to name cuts.

to determine n roasts.

hould be ______.

up of

ed

36. Helps the blood carry oxygen to and from cells.
39. ______ heat methods are used for tender beef cuts.
40. Flecks of fat throughout the lean.
41. Wholesale cuts are also known as ______ cuts.
43. Place 1" steaks ______ inches from broiler.
45. A dry heat cooking method used for tender steaks.
46. Type of beef product that should not be frozen.
47. A ground beef label says "Not less than 85% ______."
48. Figure cost per ______ when buying beef.
49. A form of panfrying used in Oriental cooking.

DA

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s tender

of foil is

ate for freezer

s this out when wrapping beef for the freezer.

U.S. Choice is a grade used for beef and ______.

13. Third highest grade of beef.
15. Roasts that are good choices for microwave cooking.
17. Beef for stew and ground beef are often made from ______.
18. A variation of broiling.
20. A ______ cross cut is a retail cut from the lower forequarter of the beef carcass.
21. A less tender steak from the chuck section.

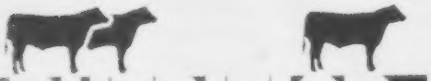
A dry heat method using a rack and an open pan.

24. One of the B-vitamins.
25. A variety meat.
26. An indication of quality of a beef carcass.
27. A small amount of ______ is the difference between panbroiling and panfrying.
28. A form of tenderizing that breaks down muscle fiber.
31. A dish appropriate for ground beef with not less than 77% lean is tamale ______.
33. Steaks broiled to 170° F. internal temperature.
34. In carving roasts, always cut across the ______.
35. 0° F. is the necessary temperature for ______ beef.
37. Ground beef with not less than 85% lean is good for low- ______ diets.
38. A tender steak.
41. Cooking in a frying-pan with a small amount of fat.
42. Number of servings per pound from round steak.
44. Maximum time roasts can be stored in the freezer.

BEST COPY AVAILABLE

This booklet is all about beef from the time you purchase it in the store until you serve it. The information is designed to help you make the best beef buy and to show you how to prepare beef to enhance its tenderness and flavor.

But why should you choose beef in the first place? The most important reason is the basic reason we eat: to obtain the nutrients in food needed by the body.



NUTRITION

PROTEIN

Beef supplies complete, high quality protein. Proteins are made up of amino acids. We need 22 amino acids, but only eight are essential, meaning they must come from food. The body makes the remaining nonessential amino acids.

Proteins which contain all of the eight essential amino acids in proportions most useful to the body are called complete or high quality proteins. Plant proteins, when eaten singly, do not contain all of the essential amino acids in sufficient quantity and therefore are incomplete. Complete proteins such as those in beef help to build, maintain and repair body tissues, form body hormones and enzymes and increase resistance to infection and disease.

One 3-oz. (85 g) cooked serving of ground beef will supply 21.8 grams of protein
or:
50% of the amount recommended for most people.

B-VITAMINS

IRON

One of beef's most important nutrients is iron. Iron helps red blood cells carry oxygen to and away from the other body cells. The iron in meat, called heme (hēm') iron, is easily utilized by the body. It also helps the body use the non-heme iron present in other foods such as legumes and grain products.

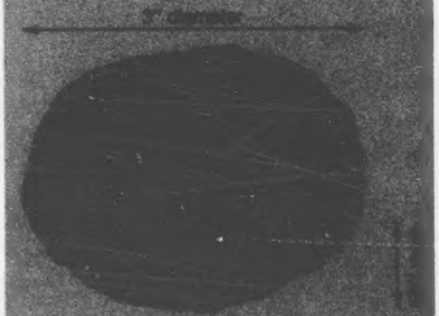
One 3-oz. (85 g) cooked serving of ground beef will supply 2.6 milligrams of iron
or:
15% of the amount recommended for most people.

ZINC

Zinc is a mineral the body needs to form enzymes and insulin.

One 3-oz. (85 g) serving of ground beef will supply 3.74 milligrams of zinc
or:
25% of the amount recommended for most people.

A serving of cooked beef is about 3 oz. (85 g). It will supply approximately 225 calories. A 3-oz. cooked ground beef patty (usually 4 ounces uncooked) is approximately 3 inches in diameter and 5/8" thick. (The diagram below is smaller than a real 3-oz. cooked patty.)



FILL IN THE CHART

When you eat a cooked, 3-oz. (85 g) ground beef patty, what percent of the recommended amounts of beef's key nutrients do you get from it? Fill in the bar-chart below using information from this page.

BEST COPY AVAILABLE

These are the factors to consider as you purchase beef:

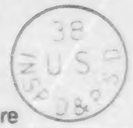
- wholesomeness
- quality
- appearance
- refrigerator and freezer storage space
- cost per serving and number to serve
- preparation method and time needed for preparation

All meat sold must, under law, pass inspection for wholesomeness.

Meat Inspection:
The purpose of inspection is to protect the consumer by guaranteeing that all meat sold is from healthy animals which were slaughtered and processed under sanitary conditions. It guarantees that the meat is suitable for consumption.

If meat is to cross state lines, it must be federally inspected. If it is to be sold only in the state, it must meet state and city inspection regulations. Federal inspection is supervised by the United States Department of Agriculture (USDA). Experienced veterinarians or specially trained, supervised inspectors inspect beef both before and after slaughter.

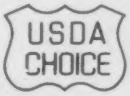
Beef which passes federal inspection for wholesomeness is stamped with a round, purple mark made with an edible vegetable dye. The number inside the mark is the official number assigned to the establishment where the animal was processed. (See illustration.) State-inspected beef will have a different shaped inspection mark, depending on the state. The inspection mark is placed only once on wholesale cuts, so you are likely to see it only on large cuts of beef.



Quality is a second factor to consider in buying beef. Quality refers to characteristics associated with the palatability of the lean (tenderness, juiciness and flavor). The names you see on beef indicate the quality of the meat. These names are either the USDA grade names or the meat packer and retailer brand names.

USDA Beef Grading:
USDA meat grading is a voluntary service. Firms pay a fee to USDA for performing this service for them. Graders are highly trained specialists employed by USDA.

A grade mark is a shield-shaped symbol with the letters USDA and the grade name (such as Choice).

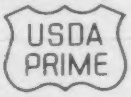


When a beef or veal carcass is graded, the grade mark is applied to the carcass (or the parts of the carcass known as wholesale cuts) with an edible purple dye in a long, ribbon-like imprint. Prepackaged meats sometimes have grade shield stickers on the package.

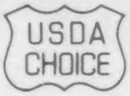
The top three of the eight beef and veal grades are U.S. Prime, U.S. Choice and U.S. Good. These are usually sold in retail stores and come from young, well-fed animals usually less than two years old. Beef graded with the other five grades (U.S. Standard, U.S. Commercial, U.S. Utility, U.S. Cutter and U.S. Canner) is usually from more mature, less tender animals. This meat is used primarily in processed meats, sausages and canned meats. It is just as wholesome and nutritious as higher grades.

Grades of Beef Sold in Retail Stores

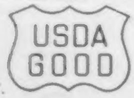
Prime: The top or highest grade of meat containing the greatest degree of marbling.* It is generally sold to finer restaurants and to select meat stores. It is always higher priced because it's produced in very limited quantities.



Choice: The grade generally sold at retail stores. It's preferred because it contains sufficient marbling for taste and tenderness but is less costly than U.S. Prime.



Good: Lower-priced grade of meat with less marbling than U.S. Choice. It's good eating and as nutritious as the other grades, though not as tender.



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*Marbling is the term for the small flecks of fat that are interspersed with the lean (muscle). It contributes to tenderness, juciness and flavor.

Other Beef Grading:
Because beef grading is a voluntary program, not all beef is graded by USDA. Many packing plants, retail chain stores and independent retailers, relying upon many years of experience in satisfying their customers, do their own grading. Their own grade names are usually referred to as brand names. Therefore you may find varying names stamped on beef.

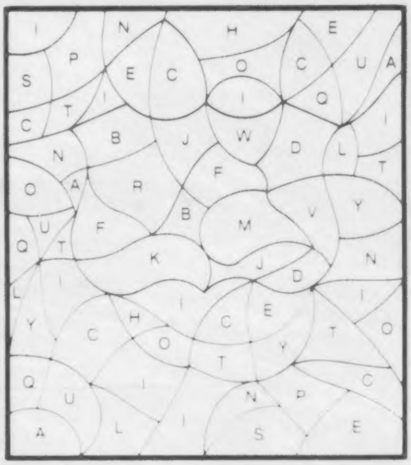
Remember, meat *inspection* is mandatory. The inspection mark means the meat is wholesome and safe to eat.

Meat *grading* is voluntary. The grade mark is a standard of quality.

Complete the following statements. Then find the answer in the jumble below and pencil in the shapes which contain the letters to each answer. (Answers appear more than once in the jumble.)

1. The grade shield on beef indicates the _____ of the product.
2. Wholesomeness in beef is indicated by the _____ mark.
3. The grade of beef sold in most stores is _____.

What is the symbol which remains after you have penciled in all the answers?



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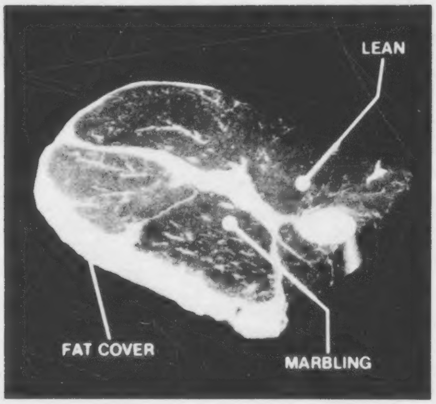

How beef looks at the meat counter is a third important factor in buying beef. Look at color of the lean, the amount of marbling and the fat cover.

The color of the lean part of the beef should be bright to deep red, unless it is cured, aged or cured-and-smoked. (A cured meat is preserved by drying or other processes, often through the use of salt or a salt solution.)

When first cut, beef is dark, purplish-red. After exposure to the air, the cut surface becomes bright red due to a reaction with oxygen in the air. This is why the outside layer of ground beef is often red while the middle is darker. The middle will also redden as it is exposed to the air.

The small flecks of fat throughout the lean are called marbling. Marbling improves the meat's flavor, tenderness and juiciness. Excessive marbling yields extra calories.

The fat which covers the exterior of most beef cuts is called fat cover. It keeps beef from drying out before cooking and helps in retaining juices during cooking.

This fat covering acts as a self baster on roasts. Look for a fat covering of 1/2" on steaks and roasts.

A fourth factor in buying beef is the available storage space in your refrigerator or freezer. (Always plan to make beef the last purchase before returning home.)

Most fresh beef is prepackaged and should be stored wrapped, as purchased. Fresh beef which is not prepackaged should be unwrapped and loosely rewrapped in plastic or foil before it's placed in the refrigerator. It can be stored for two to four days after you purchase it. Store at refrigerator temperatures (between 36° and 40° F. or 2° and 4° C). The special meat compartment in some refrigerators is designed to maintain ideal temperature.

(1) Freeze beef as soon as possible after purchase while fresh and in top condition.

(2) Select proper freezer wrapping materials such as:

- specially coated freezer paper
- aluminum foil
- heavy-duty transparent polyethylene
- heavy-duty plastic bags

The wrap must seal out air and lock in moisture. If air penetrates the package, moisture is drawn from the surface of the meat causing a harmless condition known as "freezer burn" which affects the palatability of beef when cooked. Plastic sandwich bags and waxed paper are unsuitable wrapping materials for freezing.

Prepackaged meat such as you buy at self-service meat counters can be frozen without rewrapping and stored in the freezer one to two weeks. For longer freezer storage the original package should be rewrapped or overwrapped with special freezer wrap.

(3) Prepare beef for freezing before wrapping. To conserve freezer space trim excess fat and remove bones when practical. Shape ground beef into patties; bone and cut into pieces those cuts of meat you plan to use for stew or similar dishes. Do not season as this shortens freezer life. Freeze beef cubes, patties, meatballs and meat loaves unwrapped on a tray so they won't stick together. Wrap for storage after they're frozen.

(4) Wrap tightly, pressing out as much air as possible. (See illustrations showing how to wrap.)

(5) Label properly. Indicate name of cut, approximate number of servings and/or weight and date of freezing.

(6) Freeze at once at 0° F. (-18° C) or lower. Do not stack unfrozen packages or freeze too many packages at one time. This slows down the freezing, which may lower quality.

Maintain freezer temperature at 0° F. (-18° C) or lower. Use a thermometer to check temperature.

(7) Use chart below to determine maximum storage times.

STORAGE TIME CHART

Maximum Storage Time Recommendations for Fresh, Processed and Cooked Beef

Product	Refrigerator (at 36° to 40° F. or 2° to 4° C)	Freezer (at 0° F. or -18° C)
Fresh Beef		
Roasts, steaks	2 to 4 days	6 to 12 months
Beef for stew	2 days	6 to 8 months
Ground beef	1 to 2 days	3 to 4 months
Beef variety meats	1 to 2 days	3 to 4 months
Fresh Veal		
Roasts, chops, cutlets	2 to 4 days	6 to 9 months
Ground veal	1 to 2 days	3 to 4 months
Cured and/or Smoked and Ready-to-Serve Beef Products		
Corned beef	1 week	2 weeks
Frankfurters	4 to 5 days	1 month
Luncheon meat	1 week	Not recommended
Sausage		
Smoked	3 to 7 days	
Dry and semi-dry (unsliced)	2 to 3 weeks	
Cooked Beef Products	4 to 5 days	2 to 3 months

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Freezing Cooked Beef:
Many cooks find it convenient to prepare two batches of a recipe and freeze one for later use or to prepare a meal ahead of time and freeze it.

(1) Prepare for immediate serving, but slightly underdone, to allow it to finish cooking when reheated.
(2) Cool in the refrigerator for approximately two hours.
(3) Package when cool following steps 4-7 on page 4.

Freezing Cured, Smoked or Ready-to-Serve Beef Products:
These products do not keep their high quality long in the freezer because seasonings in the products speed the development of rancidity and cause texture changes during frozen storage. For best quality, limit frozen storage of corned beef and bologna to two weeks and frankfurters to one month.

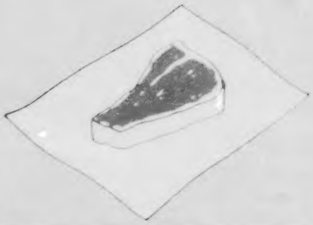
Freezing Defrosted Beef:
Refreezing of completely defrosted beef is not usually recommended except in emergencies because the quality of the beef may deteriorate between the time of thawing and refreezing. Partially defrosted beef may be refrozen.

Frozen beef may be defrosted before or during cooking. Defrost beef in the original wrapping in the refrigerator or in an appropriate container in a microwave oven. Defrosting meat at room temperature is not recommended. The length of time for defrosting meat in the refrigerator at 36° to 40° F. (2° to 4° C) is:

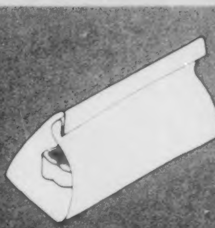
- Large Roast 4-7 hours (per pound)
- Small Roast 3-5 hours (per pound)
- 1-inch Steak 12-14 hours (total)

HOW TO WRAP BEEF FOR FREEZING

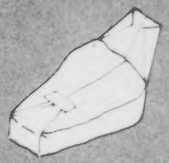
Place beef in center of wrapping material. When several steaks, patties or individual pieces of beef are packaged together, place a double thickness of freezer wrap between them for easier separation.



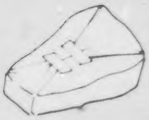
[illegible]



Smooth ends of wrap, creasing edges to form triangles. Double fold ends toward package to seal out air.



Seal ends with strips of freezer tape. Label tape with name of cut, number of servings and date of freezing.



UNSCRAMBLE THE STATEMENTS

Unscramble these to make each a factual statement about beef storage.

YASAWL APNL OT EMKA EBFE HET TLSA RHESAUPC FREBEO GERTRUNIN MEHO
1 ______________________________

SEFHR TAME ANC EB DOREST NI ETH GRAFTERIERRO ORMF OTW OT ROUF SADY
2 ______________________________

ZERGEFIN APWR UTSM LEAS OTU RAI DAN COKL NI TREMSUOI
3 ______________________________

TEIDSROGNF TEMA TA ORMO PATTERMREEU TNO CODEDMERNEM
____

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COST PER SERVING

A fifth consideration in buying beef is the cost per serving and number of people to serve. To be a smart shopper, plan around cost per serving rather than cost per pound. The amount of bone and fat in a cut determines the number of 3-oz. (85 g) servings of cooked beef a pound will provide. Some boneless cuts, although priced higher than bone-in cuts, may be better buys because they have little waste. Cooking method, internal temperature and degree of doneness are also factors.

Chart A shows how many 3-oz. servings per pound you can expect from each specific cut of beef. This chart will also help you decide how much beef to buy for the number of people you plan to serve. To determine the approximate cost per serving, simply divide the price per pound by the number of servings per pound the cut will provide. Chart B shows a few examples of cost per serving based on this formula. Here's an example of how to figure cost per serving.

Suppose you decide to prepare a pot-roast. The recipe recommends an arm pot-roast. To figure cost per serving:

	Example
(1) Locate arm pot-roast in Chart A	Arm Pot Roast
(2) Write down the servings per pound an arm pot-roast will provide indicated on Chart A	2 serv/lb.
(3) Write down the price per pound from the package label or a newspaper ad	$1.86/lb.
(4) Divide the price per pound by the number of servings per pound an arm pot-roast will provide (from no. 2 above)	$1.86÷2=$.93
(5) Write down the cost per serving	$.93/serv.

Select another cut suitable for your recipe and figure cost per serving using the steps described above. Which of the two cuts is a better buy?

CHART A Servings per Pound Chart

Number of Cooked Servings (3-3½ Ounces) Per Pound from Various Beef Cuts

Roasts	
Rib Eye Roast	3
Rib Roast	2
Rump Roast	2
Rump Roast, Boneless	3
Tip Roast	3
Top Round	3

Broiling Steaks	
Cubed Steak	4
Flank Steak	4
Porterhouse Steak	2
Sirloin Steak	2½
Rib Eye Steak	3
Rib Steak	2
Rib Steak, Boneless	2½
T-Bone	2
Tenderloin (Filet Mignon) Steak	3
Top Loin Steak	2
Top Loin Steak, Boneless	2½

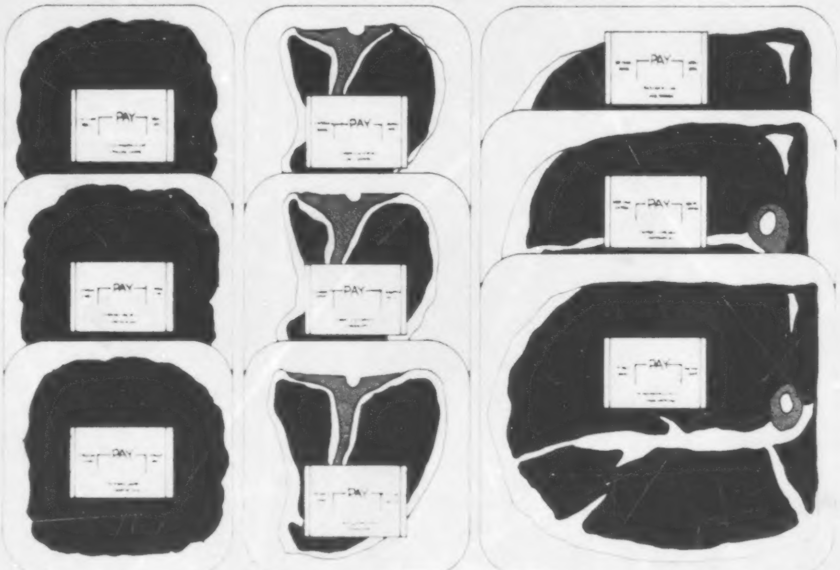
Pot-Roasts	
Arm Pot-Roast	2
Blade Roast	2
Bottom Round Roast	3
Cross Rib Pot-Roast	2
Eye Round Roast	3
Heel of Round	2
Shoulder Pot-Roast, Boneless	2½

Braising Steaks	
Arm Steak	2
Blade Steak	2
Flank Steak	3
Round Steak	3
Tip Steak	3

Other Cuts	
Beef for Stew	4
Brisket	3
Ground Beef	4
Short Ribs	2
Beef Variety Meats (liver, heart, tongue, kidney)	4

CHART B Cost Per Serving Chart

Cost Per lb.	2 Servings Per lb.	2½ Servings Per lb.	3 Servings Per lb.	3½ Servings Per lb.	4 Servings Per lb.
$1.30	$ .65	$ .52	$ .43	$ .37	[illegible]
1.70	.85	[illegible]	[illegible]	[illegible]	[illegible]
2.25	1.13	.90	.75	[illegible]	[illegible]
3.30	1.65	1.32	1.10	.94	[illegible]
4.30	2.15	1.72	1.43	1.23	1.07
5.30	2.65	2.12	1.76	1.51	[illegible]



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PREPARATION METHOD AND TIME

The final consideration when buying beef is how you plan to prepare it. The cut you select depends largely on the method of meat cookery you plan to use and the method depends on the tenderness of the cut.

But how do you know which cuts are tender? Tenderness is easy to determine once you know a little about the muscles in a beef animal. The beef animal is made up of two types of muscles: suspension and locomotion.

Suspension muscles are [illegible] movement and have [illegible] tissue. (Connective [illegible] reinforces the [illegible]) Locomotion muscles are [illegible] ment and have more [illegible] The most [illegible] [illegible]

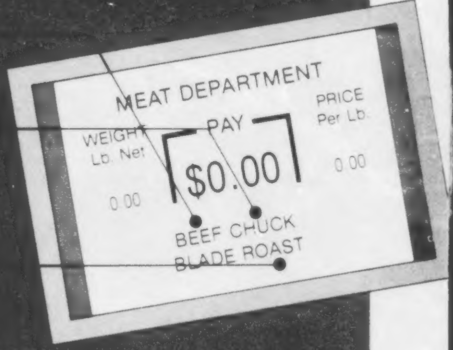
The chart on the [illegible] [illegible] sold at the meat counter [illegible]

cuts are made up of suspension muscles [illegible] [illegible]

UNIFORM RETAIL MEAT LABELING

[illegible]

Ground Beef:
This labeling system also tells you the leanness of ground beef. Leanness refers to the ratio of fat to muscle. The less fat, the leaner the beef. Ground beef can come from any of several muscles or primal cuts. It is [illegible]


MEAT DEPARTMENT
WEIGHT
Lb. Net
0.00
PAY
$0.00
PRICE
Per Lb.
0.00
BEEF CHUCK
BLADE ROAST

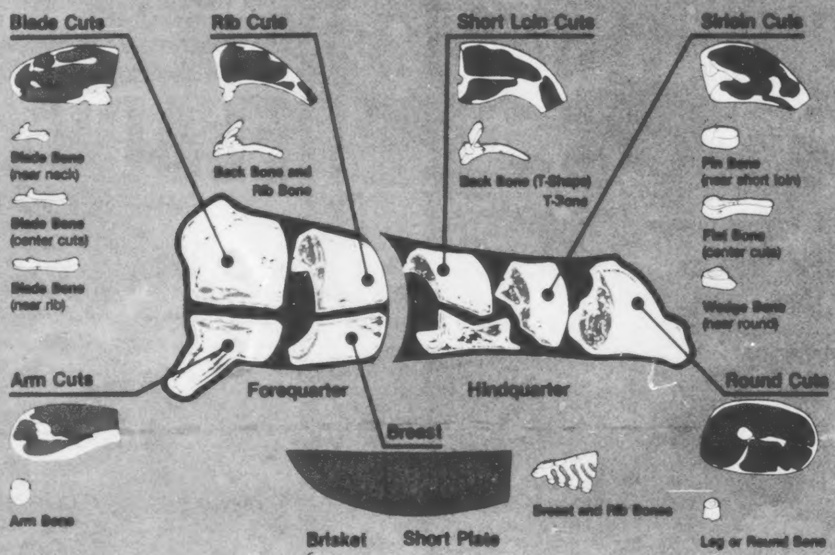
BONE SHAPE

If the store at which you shop does not use the Uniform Retail Meat Identity Standards (URMIS) to label its meat, you can use the same method used in URMIS labeling to determine which section of the animal a cut is from. URMIS cut names are based on the shape of the bone in each cut (e.g., the rib bone provides the names of rib roasts and rib steaks).

The seven bone groups shown in this diagram are about the only ones you need to know. Most other bones are removed before the cuts are sold. Once you recognize the bones that identify the seven groups of retail cuts, it's easy to identify a large number of retail cuts at the meat counter.

As you study the diagram, remember that cuts from the beef rib, short loin and sirloin are usually tender while those from the other parts of the beef animal are usually not tender.

Seven Bone Groups Use to identify groups of retail cuts


Blade Cuts
Blade Bone (near neck)
Blade Bone (center cuts)
Blade Bone (near rib)
Rib Cuts
Back Bone and Rib Bone
Short Loin Cuts
Back Bone (T-Shape) T-Bone
Sirloin Cuts
Pin Bone (near short loin)
Flat Bone (center cuts)
Wedge Bone (near round)
Arm Cuts
Arm Bone
Forequarter
Hindquarter
Breast
Breast and Rib Bones
Brisket
Short Plate
Round Cuts
Leg or Round Bone

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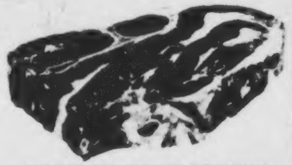
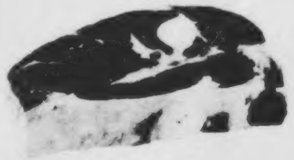
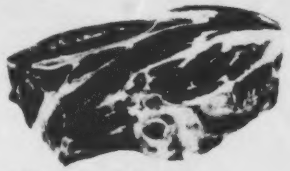
BEEF CUTS

CHUCK


7-BONE POT-ROAST OR STEAK
(Braise)


ARM POT-ROAST OR STEAK
(Braise)

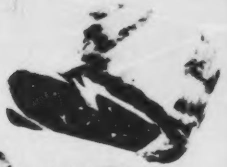
CROSS RIB POT-ROAST, BONELESS
(Braise)

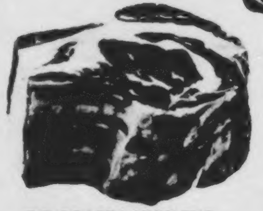

BLADE ROAST OR STEAK
(Braise; If High Quality-Roast, Broil, Panbroil)

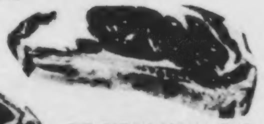
SHORT RIBS
(Braise, Cook in Liquid)

SHOULDER POT-ROAST OR STEAK, BONELESS
(Braise)

RIB


RIB EYE ROAST
(Roast)


RIB ROAST LARGE END
(Roast)


RIB STEAK SMALL END
(Broil, Panbroil, Panfry)

RIB ROAST SMALL END
(Roast)

RIB EYE STEAK
(Broil, Panbroil, Panfry)

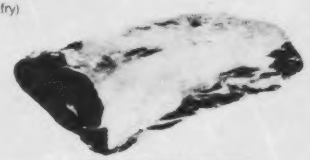
SHORT LOIN

T-BONE STEAK
(Broil, Panbroil, Panfry)

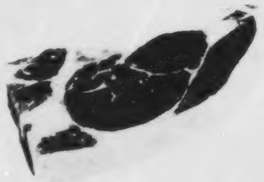
PORTERHOUSE STEAK
(Broil, Panbroil, Panfry)

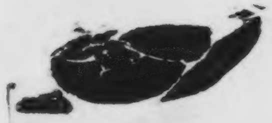
TOP LOIN STEAK, BONELESS
(Broil, Panbroil, Panfry)

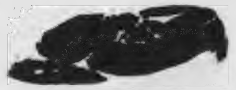
TENDERLOIN STEAK
(Broil, Panbroil, Panfry)


TENDERLOIN ROAST
(Roast, Broil)

SIRLOIN

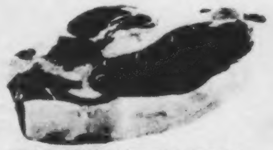

WEDGE BONE SIRLOIN STEAK
(Broil, Panbroil, Panfry)


SHELL SIRLOIN STEAK
(Broil, Panbroil, Panfry)


TOP SIRLOIN STEAK, BONELESS
(Broil, Panbroil, Panfry)

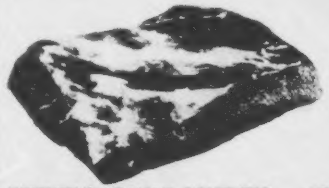
ROUND BONE SIRLOIN STEAK
(Broil, Panbroil, Panfry)

PIN BONE SIRLOIN STEAK
(Broil, Panbroil, Panfry)


FLAT BONE SIRLOIN STEAK
(Broil, Panbroil, Panfry)

BRISKET & FORE SHANK

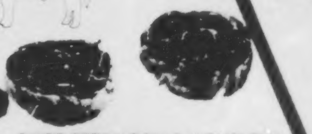
BRISKET POINT HALF, BONELESS
(Braise, Cook in Liquid)

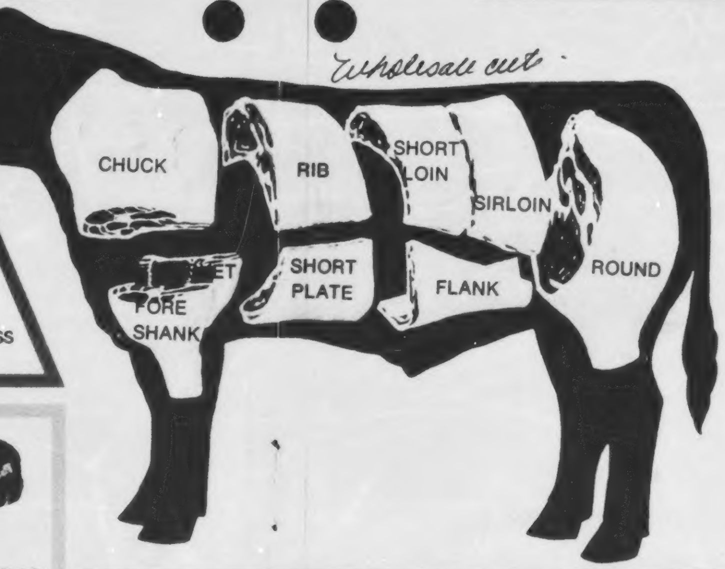

BRISKET FLAT HALF, BONELESS
(Braise, Cook in Liquid)

SHANK CROSS CUTS
(Braise, Cook in Liquid)

SHORT PLATE

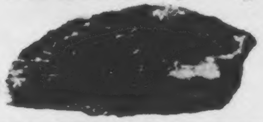
SKIRT STEAK, BONELESS
(Braise, Broil, Panbroil, Panfry)

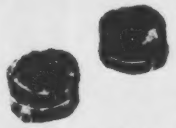

SKIRT STEAK ROLLS, BONELESS
(Braise, Broil, Panbroil, Panfry)



Wholesale cut

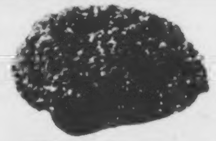
FLANK


FLANK STEAK
(Broil, Braise)


FLANK STEAK ROLLS
(Braise, Panbroil, Panfry)

TRIM

BEEF FOR STEW
(Braise, Cook in Liquid)


GROUND BEEF
(Broil, Panbroil, Panfry, Bake)

VARIETY

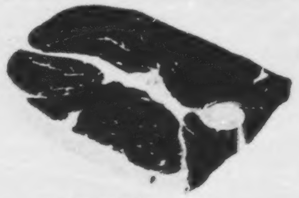
LIVER
(Braise, Broil, Panbroil)

KIDNEY
(Cook in Liquid, Braise)

HEART
(Braise, Cook in Liquid)

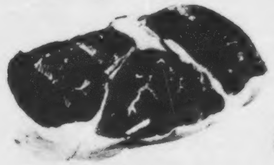
TONGUE
(Cook in Liquid)

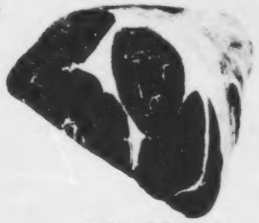
ROUND


ROUND STEAK
(Braise; If High Quality-Panfry)

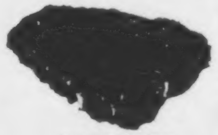
CUBES FOR KABOBS
(Braise, Broil)

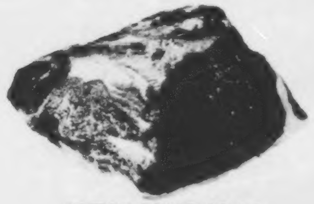
TOP ROUND ROAST
(Roast)


RUMP ROAST, BONELESS
(Braise; If High Quality-Roast)


HEEL OF ROUND
(Braise, Cook in Liquid)

TOP ROUND STEAK
(Broil, Panbroil, Panfry)


CUBED STEAK
(Braise, Panfry)


BOTTOM ROUND ROAST
(Braise; If High Quality-Roast)

TIP ROAST
(Braise; If High Quality-Roast)

EYE ROUND STEAK
(Braise; If High Quality-Panbroil, Panfry)

Photographs: **The Meat Board Meat Book,** © 1977 NLSMB

DRY AND MOIST HEAT

One of the objectives of cooking meat is to develop tenderness. Any cut can be made tender, juicy and flavorful when cooked by the appropriate method. Tender cuts are best cooked by *dry* heat methods. Less tender cuts require *moist* heat methods. The longer cooking time at low temperatures with moisture helps soften some of the connective tissue in less tender cuts.

DRY HEAT METHODS FOR TENDER CUTS

PANBROILING

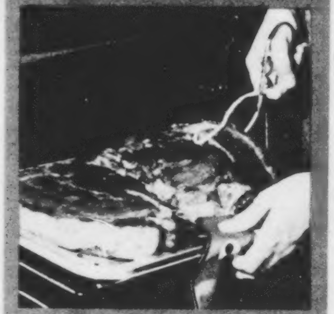
Use instead of oven broiling for small, tender beef cuts, 1 inch thick or less.

(1) Place beef in heavy frying-pan.
(2) Do not add fat or water. Do not cover. Covering creates moisture which braises the beef (a moist heat method).
(3) Cook slowly, turning occasionally.
(4) Pour off fat as it accumulates. If it collects, the beef will panfry instead of panbroil.
(5) Brown meat on both sides.
(6) Season and serve at once.

PANFRYING

Use for very thin, tender beef cuts and cuts made tender by pounding, scoring, cubing or grinding. Also, use for cuts coated with flour, meal or egg and crumbs.

(1) Place beef in a small amount of heated fat in frying-pan.
(2) Brown on both sides.
(3) Season, if desired.
(4) Do not cover.
(5) Cook at moderate temperature until done, turning occasionally.

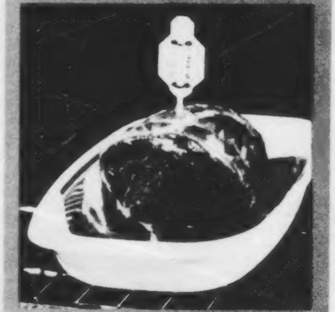


BROILING

Use for tender steaks at least one inch thick and ground beef patties.

(1) Place beef on rack in broiler pan. Place one-inch steaks or patties 2 to 3 inches from heat; thicker cuts, 3 to 5 inches.
(2) Broil until top surface is brown.
(3) Season after browning.
(4) Turn meat with tongs, cook until done. Do not use a fork as it will puncture the meat, releasing juices.

A charcoal, electric or gas grill can be used for broiling. Use the same cuts of beef and follow the same steps as in broiling. Success depends largely on consistent low to moderate heat. Cooking time will vary with the beef cut, fire or heat, position on grill, degree of doneness desired and wind, if outdoors. This method is referred to as barbecuing in some parts of the country.



ROASTING

Use any large, tender cut of beef or veal.

(1) Season, if desired.
(2) Place beef, fat side up, on a rack in open, shallow pan. The fat on top of the roast bastes it; the rack holds it out of the drippings.
(3) Insert meat thermometer. Bulb should be in the center of the largest muscle and not touching bone or resting in fat.
(4) Do not add water. Do not cover.
(5) Roast in a slow oven, 300° to 325° F. (150°-160° C).
(6) Roast to 5° F. below desired degree of doneness. Allow roast to stand 15-20 minutes before carving. Internal temperature will usually increase 5° F. while the roast stands.

Rotisserie cooking is a form of roasting. Use large, symmetrical cuts.

(1) Insert rotisserie rod, lengthwise, through center of roast; fasten beef securely.
(2) Place a drip pan under the turning beef to prevent flareups. Arrange coals around the pan.
(3) Insert thermometer, as in roasting. Be sure bulb does not touch the rotisserie rod.

VARIATIONS–DRY HEAT METHODS

STIR-FRYING

Stir-frying is a form of panfrying used in Oriental cookery. A wok, large frying-pan or electric fry-pan can be used.

(1) Cut ingredients to uniform size, shape and thickness before beginning to cook. Beef should be sliced thin, across the grain.
(2) Heat oil in pan.
(3) Place one food at a time in the pan.
(4) Stir continuously until cooked. Push cooked pieces up the wide sides of the wok or remove from the pan.
(5) Repeat until all foods are cooked.
(6) Combine all foods in pan. Add sauce, if desired, and cook until thickened. Serve at once.

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DEEP-FAT FRYING

Deep-fat frying is another form of frying.

1. (1) Cut or shape beef into uniform pieces. Coat with batter, eggs and crumbs or flour, if desired.
2. (2) Use deep pan (such as a kettle, electric deep-fat fryer or fondue pot) and when necessary a wire frying basket.
3. (3) Heat fat to frying temperature. Heat enough fat to cover the beef pieces. Size of the pieces and whether the beef is cooked or uncooked determine the suitable temperature (between 300° and 360° F. or 150° and 175° C).
4. (4) Place beef in frying basket. Lower beef a few pieces at a time into the hot fat.
5. (5) Fry until browned and cooked through.
6. (6) When done, remove beef from fat and place on absorbent towels.

MOIST HEAT METHODS FOR LESS TENDER CUTS

BRAISING

(1) Brown beef in its own fat or in a small amount of added fat in a heavy utensil. Brown all sides slowly. The beef may be dredged in flour.

(2) Season. Herbs and spices can be added to flour, if desired.

(3) Add small amount of liquid (¼ to ½ cup). Use water, soup stock, vegetable juice or marinade.

(4) Cover tightly. A tight lid holds in the steam needed for softening the connective tissue and tenderizing the beef.

(5) Cook at low temperature until tender. Cook on top of range or in a slow oven at 300° to 325° F. Remove beef to heated platter and make sauce or gravy from the liquid in the pan, if desired.

A charcoal, electric or gas grill can be used for braising less tender cuts. Wrap beef securely in heavy-duty foil or cook in a small amount of liquid in a covered pan.

(1) Dredge beef in seasoned flour, if desired.

(2) Brown the cut on all sides in a heavy utensil in its own fat or drippings, when desired.

(3) Cover with liquid, cover utensil, cook just below boiling point until tender. (Boiling will toughen the meat.)

(4) Add vegetables (whole or cut in large pieces) just long enough before serving to be cooked. When done, thicken pan juices, if desired. If the beef is to be served cold (e.g., corned beef), refrigerate it in the stock in which it was cooked.

VARIATIONS–MOIST HEAT METHODS

Less tender cuts of beef can also be cooked in a pressure pan in less time than used in ordinary cooking methods. Consult the instruction book that accompanies the pressure pan to avoid over or under-cooking.

COOKING IN A SLOW ELECTRIC COOKER

A slow cooker gently simmers the foods in a liquid at low temperatures over a long period of time (4-12 hours). It is most suitable for less expensive, less tender beef cuts. Consult the instruction book that accompanies the appliance.

COOKING FROZEN BEEF

Frozen cuts cooked by moist heat methods usually need little, if any, additional cooking time.

Dry heat methods can be used to cook frozen beef cuts if additional cooking time is allowed. Allow 1⅓ to 1½ times the cooking time recommended for an unfrozen roast. Allow 1½ to 2 times the time recommended to panfry or broil an unfrozen steak. Beef cuts to be floured before browning, coated with eggs and crumbs or dipped in a batter need to be partially defrosted so the coatings will stick.

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For cooking in a conventional oven

DRY HEAT-TENDER CUTS

Primal Cut	Retail Cut	Approx. Thickness	Weight in lbs.	Approx. Total Cooking Time (Min.)	
				Rare	Medium
Chuck	Chuck Blade	¾ in.	1¼ to 1¾	14	20
	Steak	1 in.	1½ to 2½	20	25
	(high quality)	1½ in.	2 to 4	35	40
Rib	Rib Eye	1 in.	8 to 10 ozs.	[illegible]	[illegible]
	Steak	1½ in.	12 to 14 ozs.	25	[illegible]
		2 in.	[illegible]	[illegible]	[illegible]
	Rib Steak	1 in.	1 to 1½ ozs.	15	20
		1½ in.	1½ to 2 ozs.	25	30
		2 in.	2 to 2½ ozs.	35	45
Short Loin	Porterhouse	1 in.	1¼ to 2 ozs.	[illegible]	[illegible]
	Steak	1½ in.	2 to 3 ozs.	30	[illegible]
		2 in.	[illegible]	40	[illegible]
	Tenderloin	1 in.	4 to 6 ozs.	15	20
	Steak	1½ in.	6 to 8 ozs.	18	22
	Top Loin	1 in.	1 to 1½ ozs.	[illegible]	[illegible]
	Steak	1½ in.	1½ to 2 ozs.	[illegible]	[illegible]
		2 in.	[illegible]	[illegible]	[illegible]
Sirloin	Sirloin	1 in.	1½ to 3 ozs.	20	25
	Steak	1½ in.	2¼ to 4 ozs.	30	35
		2 in.	3 to 5 ozs.	40	45
Round	Top Round	1 in.	[illegible]	[illegible]	[illegible]
	Steak	1½ in.	[illegible]	[illegible]	[illegible]
Flank	Flank Steak	—	1 to 1½ lbs.	12	14
Other	Ground Beef Patties	1 x 3 in.	4 ozs.	[illegible]	[illegible]

*This timetable is based on broiling at a moderate temperature. Rare steaks are broiled to an internal temperature of 140° F.; medium, to 160° F.; well-done, to 170° F.

ROASTING (300° F. -325° F. Oven Temperature)

Primal Cut	Retail Cut	Approx. Weight (Pounds)	Meat Thermometer Reading	Approx. Cooking Time[1] (Min. per lb.)
Rib	Rib Roast[2]	4 to 6	140° F. (rare)	26-32
			160° F. (med.)	34-38
			170° F. (well)	40-42
		6 to 8	140° F. (rare)	23-25
			160° F. (med.)	27-30
			170° F. (well)	32-35
	Rib Eye Roast[3]	4 to 6	140° F. (rare)	18-20
			160° F. (med.)	20-22
			170° F. (well)	22-24
Short Loin	Tenderloin[4]	2 to 3 (half)	140° F. (rare)	45-50 (Total)
		4 to 6 (whole)	140° F. (rare)	45-60 (Total)
Round	Rump, Boneless (high quality)	4 to 6	140° F.-170° F.	25-30
	Tip[5]	3½ to 4	140° F.-170° F.	35-40
		6 to 8	140° F.-170° F.	30-35
	Top Round	4 to 6	140° F.-170° F.	25-35
Other	Ground Beef Loaf (9"x5")	1½ to 2½	160° F.-170° F.	1-1½ hours (Total)

[1] Based on beef taken directly from the refrigerator.

[2] Ribs which measure 6 to 7 inches from chine bone to tip of rib.

[3] Roast at 350° F. oven temperature.

[4] Roast at 425° F. oven temperature. Because a tenderloin roast is a small piece of meat, it only needs a short cooking period. A higher oven temperature is recommended in order to develop sufficient browning during the short cooking time.

[5] Serve, carved in thin slices.

OTHER

Primal Cut	Retail Cut	Approx. Weight or Thickness	Approx. Total Cooking Time (Hrs.)
Chuck	Blade Roast	3 to 5 pounds	2 to 2½
	Arm Pot-roast	3 to 5 pounds	2½ to 3½
	Chuck Eye and Shoulder Roasts, Boneless	3 to 5 pounds	2½ to 3½
	Short Ribs	Pieces (2"x2"x4")	1½ to 2½
Round	Round Steak	¾ to 1 inch	1 to 1¾
Other	Cubes	1 to 1½ inches	1½ to 2½

COOKED IN LIQUID

Primal Cut	Retail Cut	Approx. Weight or Size	Approx. Total Cooking Time
Brisket	Fresh or Corned Beef	4 to 6 pounds	40 to 50 min. per pound
Shank	Shank Cross Cuts	¾ to 1¼ pounds	2½ to 3 hours (Total)
Chuck, Short Plate, Flank or Round	Beef for Stew	1 in. to 1½ in. cubes	1½ to 2½ hours (Total)

BEEF VARIETY MEATS

Cut	Broiled or Fried	Braised	Cooked in Liquid
Liver			
Beef			
3 to 4 pounds		2 to 2½ hours	
Sliced		20 to 25 minutes	
Calf			
Sliced	6 minutes		
Kidney	10 minutes	1 hour	1 hour
Heart			
Whole		3 to 3½ hours	3 to 3½ hours
Sliced		1½ to 2 hours	
Tongue			3 to 4 hours

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TENDERIZING

You may choose to tenderize less tender cuts before cooking them. They can then be cooked by a dry heat method. You can use marinades, pound or cube the meat or use commercial tenderizing mixtures.

MARINADES

Marinades are liquids which traditionally contain some sort of food acid such as vinegar, wine, citrus or tomato juice. The acid helps soften the meat fibers and connective tissue and adds flavor. Most marinades also contain a small amount of oil and are especially appropriate for beef cuts which usually have little natural fat. Beef is placed in the marinade under refrigeration for 6-24 hours.

POUNDING

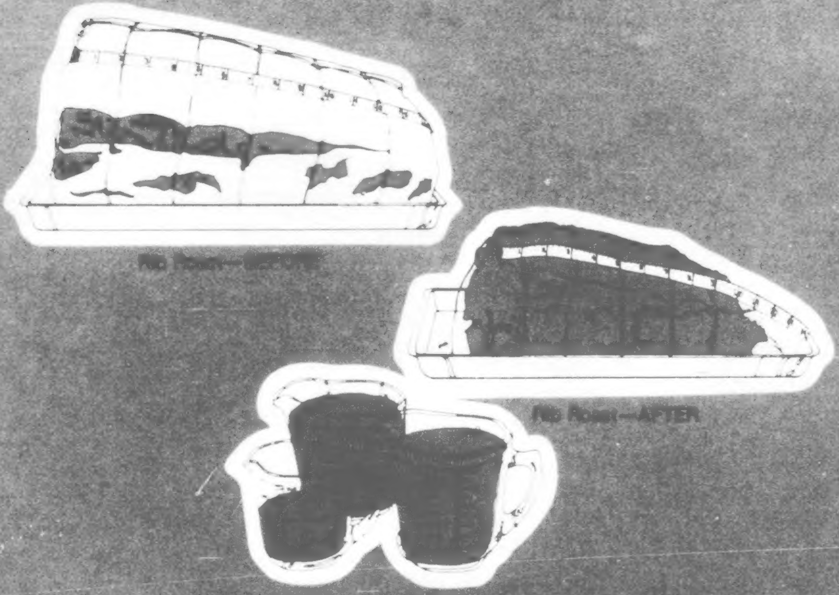
Pounding with a heavy object such as a meat mallet, or with the edge of a heavy saucer, tenderizes by breaking down the beef fibers, particularly the connective tissue.

CUBING

Cubing is a more thorough process than pounding because it breaks down the fiber structure even more. Beef is "cubed" by a machine at the meat counter. Do not confuse this with cutting the meat into cubes, as for stew, or grinding.

COMMERCIAL TENDERIZERS

Tenderizers come in various forms and contain active ingredients called enzymes. The enzymes break down the connective tissues. Naturally occurring enzymes, such as papain from the papaya fruit and bromelain from pineapple, are used in commercial tenderizers.



Rib Roast—BEFORE

Rib Roast—AFTER

DISCOVER THE REASON

Why did this roast shrink so much during cooking? To find out, answer the true and false questions below by circling the letter in the column of your choice. The circled letters will spell out the trouble with the cooking method.

TRUE	FALSE	
O	K	1. Less tender cuts require moist heat methods.
A	V	2. Dry heat helps dissolve connective tissue.
E	B	3. Use small or thin, tender cuts for panbroiling.
N	S	4. Panfrying is best for tender beef cuts with low fat content, cuts made tender by pounding or cubing, or cuts coated with flour, meal or egg and crumbs.
L	T	5. When broiling, always turn meat using a sharp fork.
O	R	6. When roasting, always cook beef fat side up.
O	M	7. Bulb of meat thermometer should not touch bone or rest in fat.
H	J	8. Allow roasts to stand 15 to 20 minutes before carving.
E	O	9. Keep the liquid boiling at all times when cooking in liquid.
C	T	10. The recommended time to roast a 4 to 6-pound whole tenderloin is two to three hours.

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COOKING

ROASTING

The most successful roasts for microwave cooking are tender cuts that are compact and uniform in shape. Boneless roasts such as rib eye, top round, tip or rump (rolled and tied) are good choices as are small end rib roasts. Roasts that are uneven in shape cook more unevenly.

Cook roasts on a rack and cover with wax paper. If a roast is irregular in shape and a smaller portion is cooking too quickly, cover this portion with foil to retard cooking. The amount of foil must be much smaller than the amount of meat exposed. (Caution: NEVER allow foil to come in contact with the inside of a microwave oven.)

As with roasts prepared conventionally, a meat thermometer or sensory probe is the most accurate way to determine doneness. Special microwave meat thermometers must be used inside these ovens. A regular roast meat thermometer can be used to check the internal temperature after the meat has been removed from the oven.

Roasts are most uniform in doneness throughout when cooked at a low power setting (approximately 200 watts), although this requires a longer cooking time. Some roasts are also acceptable when cooked at a medium setting (approximately 325 watts) but a high setting is not recommended.

BRAISING

It's necessary to cook less tender meat cuts slowly to increase their tenderness. Therefore, it is more difficult to develop tenderness by means of the rapid cooking of the microwave oven. To enhance tenderness, try one of the following:

- Cover beef with plastic wrap or place in cooking bag and extend cooking time. (Avoid overcooking.)
- Use one of the simmering pots designed for microwave ovens.
- Cook other foods such as rice or vegetables with the beef.
- Marinate the beef in a liquid containing a food acid such as vinegar or lemon juice before cooking.
- Pound or cut beef into thin strips.

- To enhance appearance of beef cooked by microwave, try one of the following:
  - Brush the surface with a dark liquid such as soy sauce, Worcestershire sauce or browning sauce.
  - Sprinkle the surface with a gravy or soup mix or seasoned salt.
  - Brush surface with oil, then coat the outside with fine bread, cracker or other crumbs.
  - Add a sauce or glaze. Those high in sugar will brown more readily.
  - Pre-brown the beef in a frying pan before cooking or follow manufacturer's directions for use of browning dish.
- To assure even cooking, turn meat and/or rotate the pan or dish ¼ or ½ turn at intervals during the cooking period.

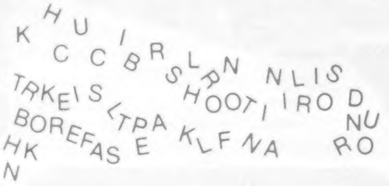
Because only a minute or two in the microwave oven can result in overcooked or undercooked beef, it is important to know factors which can affect cooking time.

- Colder food takes longer to cook.
- Outside edges cook more quickly, as do flat, thin shapes.
- High moisture foods cook more slowly. Foods high in fat and sugar cook more quickly.
- More food requires longer cooking time.
- Large pieces of food continue to cook when removed from the oven. (Slightly undercook foods and allow for standing time.)

Answers to Games and Activities

Page 1: Crossword Puzzle
Across
1 pressure cooking, 5 marinade, 7 four, 9 fifteen, 11 brisket, 12 defrosted, 14 labeling, 16 meat thermometer, 18 browning, 19 amino acids, 22 purple, 28 proteins, 29 prime, 30 braising, 32 choice, 34 ground beef, 36 iron, 39 dry, 40 marbling, 41 primal, 43 two, 45 broiling, 46 smoked, 47 lean, 48 serving, 49 stirfry
Down
2 refrigerator, 3 chuck, 4 inspection, 5 moist, 6 aluminum, 8 air, 10 veal, 13 good, 15 boneless, 17 trim, 18 barbeque, 20 shank, 21 blade, 23 roasting, 24 niacin, 25 liver, 26 grading, 27 fat, 28 pounding, 31 pie, 33 well done, 34 grain, 35 freezing, 37 calorie, 38 sirloin, 41 panfry, 42 three, 44 year

Draw lines on this carcass to show how you would cut it into eight sections. Each section will spell out the name of one of the eight primal cuts, if you unscramble the letters correctly.



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Answers to Games and Activities

Page 2: Fill in the Chart
Protein—50%, Riboflavin—10%, Niacin—25%, Vitamin B_{12}—20%, Iron—15%, Zinc—25%.

Page 3: Find the Answers
1. Quality
2. Inspection
3. Choice

Symbol: Grade Mark Shield

Page 5: Unscramble the Statements
1. Always plan to make beef the last purchase before returning home.
2. Fresh meat can be stored in the refrigerator from two to four days.
3. Freezing wrap must seal out air and lock in moisture.
4. Defrosting meat at room temperature is not recommended.

Page 13: Discover the Reason
True: Numbers—1, 3, 4, 6, 7, 8.
False: Numbers—2, 5, 9, 10.

Page 14: Complete the Diagram
Chuck, Rib, Short Loin, Sirloin, Round, Brisket and Fore Shank, Plate, Flank.

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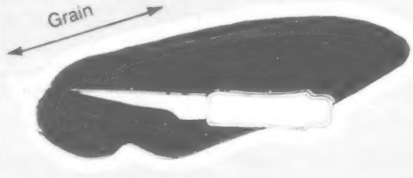
CARVING

Proper carving makes meat seem more tender. You need a good, razor-sharp knife, a good cutting board and some knowledge of the structure of the meat to be carved.

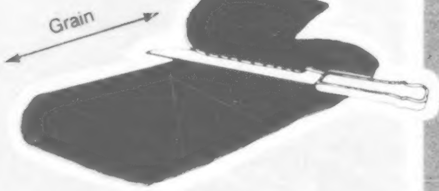
Meat is made up of bundles of long muscle fibers held together with connective tissue. Fibers would be difficult or impossible to chew if they weren't made softer and shorter. Proper cooking *softens* the fibers and connective tissues. Proper carving *shortens* the fibers.

The direction in which the muscle fibers run is called the grain. The principle of meat carving is to cut across the grain. This is a simple principle, but carving itself is not always as simple. Some roasts are made up of more than one muscle, and the fibers in each of the different muscles may run in slightly different directions. This makes finding the grain more difficult. The illustration below shows what the grain looks like and the correct and incorrect methods of slicing.

Cut Across the Grain



Correct

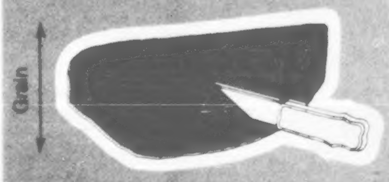


Incorrect

EXCEPTION: TENDER STEAKS

Contrary to most carving rules, some tender steaks are carved with the grain. Steaks from the short loin and sirloin need not be cut across the grain because the meat fibers are tender and already relatively short.

Cut with the Grain



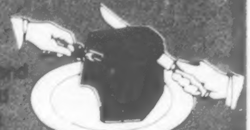
Steps

There are four easy steps to carving:

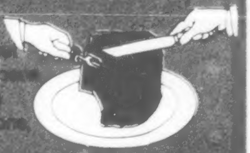
1. **Remove a roast from oven and let set 15 to 20 minutes before carving so that it will be easier to carve and more juicy. If steaks are to be carved, do so immediately.**
2. **Determine which way the muscle fibers run in the meat. This is the grain.**
3. **Anchor the meat firmly with a two-pronged carving fork.**
4. **Slice roasts *across* the grain; carve tender steaks with the grain. Carve less tender steaks (e.g. top round, flank) diagonally across the grain into thin slices.**

CARVING INSTRUCTIONS

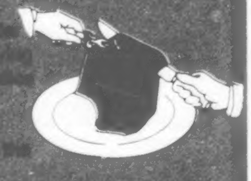
Rib Roast of Beef



Place roast on the platter with largest end down to form a solid base. Insert the fork between the two top ribs. Starting on the fat side, carve across the grain to the rib bone.

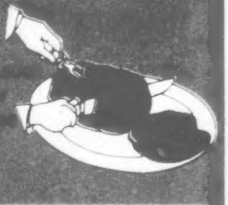


Use tip of knife to cut along rib bone to loosen the slice. Be sure to keep close to the bone, to make the largest servings possible.



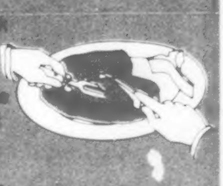
Slide knife back under the slice and, steadying it with the fork, lift slice to side of platter. If the platter is not large enough, place the slices on a heated platter close by.

Boneless Cuts



Most boneless roasts, such as rib eye, tenderloin or chuck eye, are carved as the roast pictured.

Porterhouse Steak



Hold steak with the fork inserted at the left, cut close around bone. Lift the bone to the side of the platter. With fork firmly holding the tenderloin, cut across width of steak to include a portion of tenderloin and top loin.

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THE PRICE OF BEEF

Supply and Demand

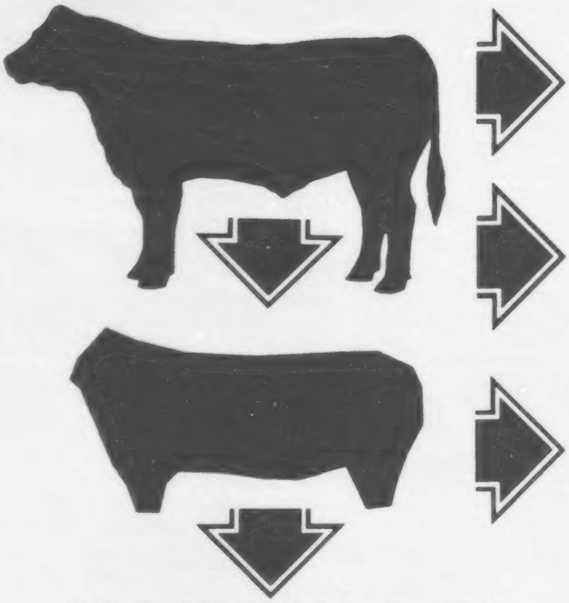
As with other items, the price of beef is determined by the law of supply and demand. When the supply of beef exceeds demand, the price cattle raisers get for beef is low and they lose money. They then must reduce the number of cows they're raising because they can't afford the costs of maintaining a large herd. Years later the result is a supply of beef lower than demand. Then prices go up and cattle raisers make a profit. They begin to expand their herds. This process is known as the "cattle cycle." The complete cycle is usually 10 to 12 years.

Unlike other industries, beef production can't react quickly to a change in consumer demand. (It takes about two to two-and-a-half years from the time a calf is conceived until it's ready for the market.)

By-Products

The price of beef on the table is well below what it might otherwise be because of the monetary value of the things that come from cattle besides beef.

A 1,000 lb. steer doesn't yield 1,000 lbs. of beef. On the average, that half-ton steer yields only about 432 lbs. of retail beef cuts sold in the store. This is less than half of the live animal's weight. Very little of that other 568 lbs. which does not become retail beef is lost, however. The flow chart shows how it's used.



27 lbs. Variety Meats
Brains Sweetbreads
Heart Tongue
Kidneys Tripe
Liver

358 lbs.
Hide and hair
Bones, horns, hooves
Inedible glands and organs

183 lbs.
Fat
Bone
Waste

432 lbs. Retail Cuts: Steaks, Roasts, Ground Beef

Some Examples of By-Products

The importance of the tremendous quantity of iron, zinc, B-vitamins and high-quality protein that beef contributes to the American diet is well known. And equally noteworthy and vital are the contributions that the beef industry makes to the quality of American life beyond the dinner table.

From Hide and Hair	From Bones and Horns	From Glands and Internal Organs
All leather goods: shoes luggage wallets automobile upholstery	Bone china	Medicines such as: hormones insulin ACTH cortisone
Camel's hair for: artists' brushes (hair in cattle ears)	Carving set handles	Chemicals for: tires, to run cooler
Curled hair for: upholstery	Gelatin for: marshmallows photographic film	Binders for: asphalt in roads
Drum heads	Stearin for: chewing gum candies	Fats for: soap livestock feeds nitrogen fertilizers
Violin strings	Bone charcoal for: steel ball bearings	
	Special glue for: plywood and matches	

Beef is the end product of the cattle industry. Kansas is one of the top beef-producing states in the country. The cattle industry is our most important industry . . . bigger than wheat, bigger than the manufacture of aircraft, bigger than the petroleum industry, in fact, bigger than all other industries. Beef processing (packing plants) is the state's second largest industry. Together . . . the Kansas beef business is more than a two billion ($2,000,000,000.00) dollar industry.

Because it's so big, the beef industry involves many different people. With a little thought, it's easy to list many different occupations that are somehow connected with the beef business . . . rancher, farmer, feeder, veterinarian, banker, meat packer, trucker, retailer (grocery operator), restaurateur, government inspector, manufacturer, construction worker and many, many more. Beef is every bit as important to the economic well-being of the people of Kansas as it is to their health.

Kansas Beef Council

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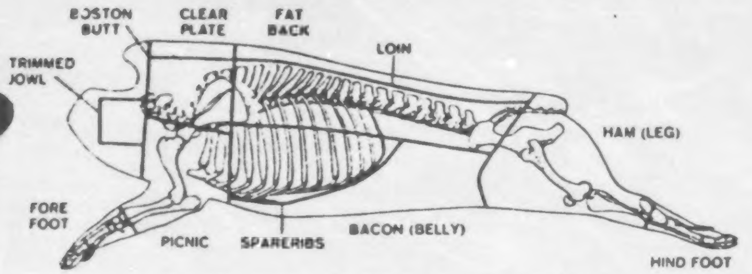
PORK CHART

WHOLESALE CUTS OF PORK AND THEIR BONE STRUCTURE


BOSTON BUTT
CLEAR PLATE
FAT BACK
LOIN
TRIMMED JOWL
HAM (LEG)
FORE FOOT
PICNIC
SPARERIBS
BACON (BELLY)
HIND FOOT

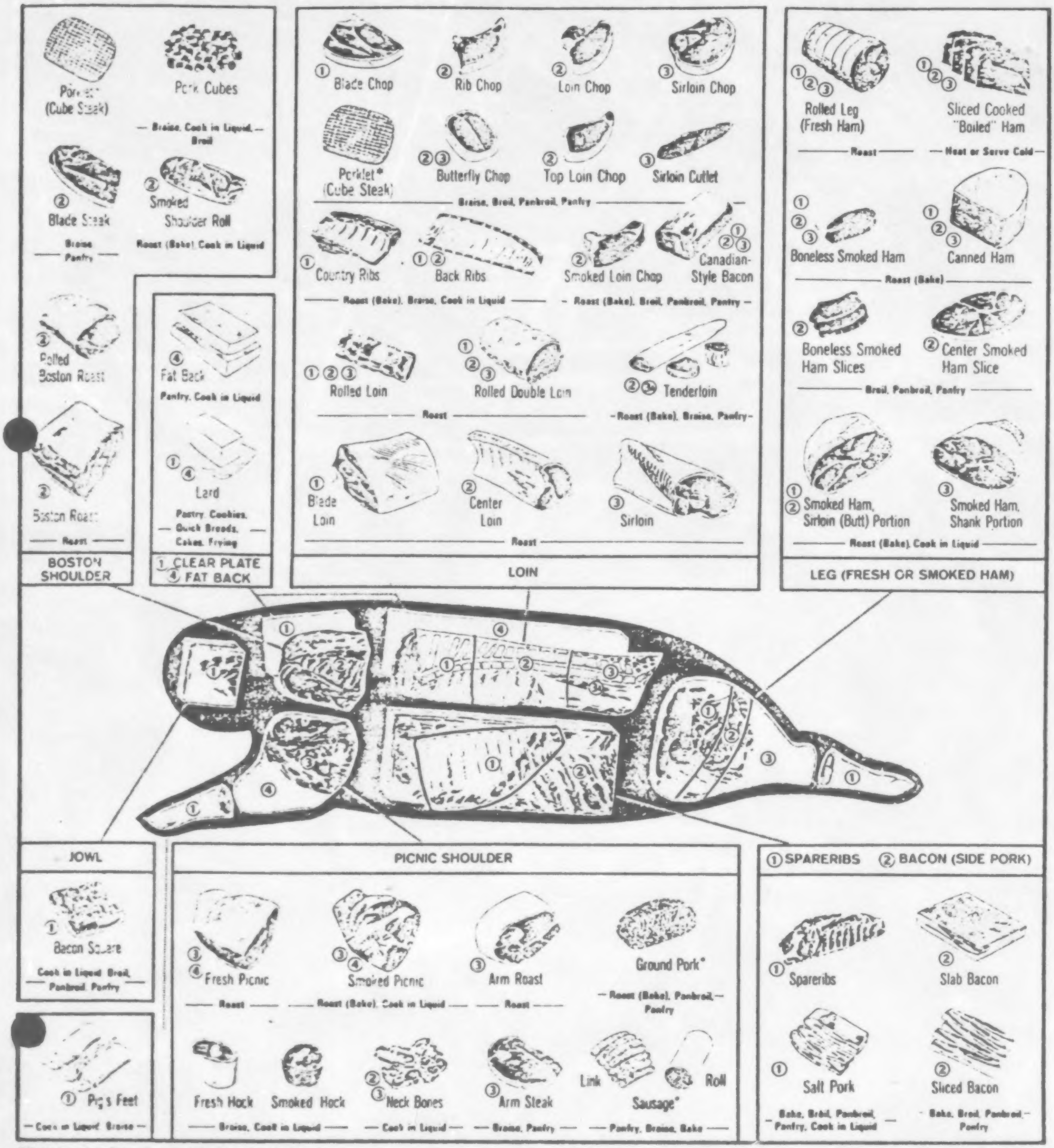
APPROXIMATE YIELDS*

1:4

NAME OF CUT	PERCENT
Fresh Hams, Skinned	21.0
Loins, Blade on	18.0
Boston Shoulder	6.6
Picnics, Shoulder	8.8
Bacon, Square Cut	17.3
Spareribs	3.8
Jowl, Trimmed	3.0
Feet, Tail, Neckbones	6.0
Fat Back, Clear Plate and all Fat Trimmings	11.2
Sausage Trimmings	4.3
Total	100

*Packer Dressed Hog, Head off, Leaf out
No allowance for cutting shrink

RETAIL CUTS OF PORK — WHERE THEY COME FROM AND HOW TO COOK THEM


Porklet* (Cube Steak)
Pork Cubes
— Braise, Cook in Liquid, — Broil
② Blade Steak
Braise — Panfry —
② Smoked Shoulder Roll
Roast (Bake) Cook in Liquid
② Rolled Boston Roast
② Boston Roast
— Roast —
BOSTON SHOULDER
④ Fat Back
Panfry, Cook in Liquid
①④ Lard
Pastry, Cookies, — Quick Breads, — Cakes, Frying
① CLEAR PLATE
④ FAT BACK
① Blade Chop
② Rib Chop
② Loin Chop
③ Sirloin Chop
Porklet* (Cube Steak)
②③ Butterfly Chop
② Top Loin Chop
③ Sirloin Cutlet
Braise, Broil, Panbroil, Panfry
① Country Ribs
①② Back Ribs
Roast (Bake), Braise, Cook in Liquid
② Smoked Loin Chop
①②③ Canadian-Style Bacon
— Roast (Bake), Broil, Panbroil, Panfry —
①②③ Rolled Loin
①②③ Rolled Double Loin
Roast
②③ Tenderloin
— Roast (Bake), Braise, Panfry —
① Blade Loin
② Center Loin
③ Sirloin
Roast
LOIN
①②③ Rolled Leg (Fresh Ham)
— Roast —
①②③ Sliced Cooked "Boiled" Ham
— Heat or Serve Cold —
①②③ Boneless Smoked Ham
①②③ Canned Ham
Roast (Bake)
② Boneless Smoked Ham Slices
② Center Smoked Ham Slice
Broil, Panbroil, Panfry
①② Smoked Ham, Sirloin (Butt) Portion
③ Smoked Ham, Shank Portion
Roast (Bake), Cook in Liquid
LEG (FRESH OR SMOKED HAM)
① ② ③ ④
JOWL
① Bacon Square
Cook in Liquid, Broil, — Panbroil, Panfry —
① Pig's Feet
— Cook in Liquid, Braise —
PICNIC SHOULDER
③④ Fresh Picnic
— Roast —
③④ Smoked Picnic
— Roast (Bake), Cook in Liquid —
③ Arm Roast
— Roast —
Ground Pork*
— Roast (Bake), Panbroil, — Panfry
Fresh Hock
Smoked Hock
— Braise, Cook in Liquid —
②③ Neck Bones
— Cook in Liquid —
③ Arm Steak
— Braise, Panfry —
Link Roll Sausage*
— Panfry, Braise, Bake —
① SPARERIBS ② BACON (SIDE PORK)
① Spareribs
② Slab Bacon
① Salt Pork
② Sliced Bacon
— Bake, Broil, Panbroil, Panfry, Cook in Liquid —
— Bake, Broil, Panbroil, — Panfry

*May be made from Boston Shoulder, Picnic Shoulder, Loin or Leg

POINTS TO REMEMBER WHEN COOKING MEAT IN QUANTITY[1]

Shrinkage during cooking results from:

1. Evaporation, or the loss of water and other volatile substances from the surface of meat as it cooks.
2. Pan drippings, or the loss of fat, water, salts and extractives which accumulate in the utensil as the meat cooks.

Factors affecting shrinkage are:

1. Cooking method
2. Degree of doneness

Low temperatures in meat cookery mean:

1. Less shrinkage of meat
2. More servings available
3. Less fuel consumed
4. Easier control in cooking process
5. Less watching involved
6. Retention of nutritional values
7. Appetite appeal and palatability

Cooking time is affected by:

1. Cooking temperature
2. Size and shape of cut
3. Style of cut
4. Oven load
5. Quality of meat
6. Ageing of meat
7. Doneness desired

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[1] National Livestock and Meat Board

Cooking Meat and Poultry

Thawing Frozen Products:

Put wrapped product in refrigerator and thaw completely. Takes several hours. Or may be thawed in water-tight package under cold water. Cook promptly after thawing.

For Unthawed Products:

Allow more time to cook. Example: if a fresh or thawed roast needs 2 hours to cook, a frozen roast the same size may need as much as 3 hours to cook.

Leftovers, Pork, Poultry, Ground Meat:

Heat all the way through.

Using a Meat Thermometer:

Insert thermometer into thickest part of meat—should not be in the fat or touch the bone. For turkeys, insert thermometer into the thick part of the thigh next to body of bird.

COOK TO TEMPERATURES SHOWN *(Thermometer Inserted Into Meat)*	
FRESH BEEF	
Rare	140° F.
Medium	160° F.
Well Done	170° F.
FRESH VEAL	170° F.
FRESH LAMB	
Medium	170° F.
Well Done	180° F.
FRESH PORK	170° F.
CURED PORK	
Ham, Raw (Cook before eating)	160° F.
Ham, Fully cooked, (To warm)	140° F.
Shoulder (Cook before eating)	170° F.
Canadian Bacon (Cook before eating)	160° F.
POULTRY	
Turkey	180-185° F.
Boneless Turkey Roasts	170-175° F.
Stuffing (Inside or outside the bird)	165° F.

Press fingers on flesh of thigh or breast; if meat is soft, it is done.

Meat and Poultry Inspection Program
Animal and Plant Health Inspection Service
U.S. Department of Agriculture

September 1975

Storing Meat and Poultry

1:6

To Store In Refrigerator: May be stored as purchased in plastic wrap for a day or two. For longer time, remove from store wrapping and wrap loosely in wax paper or plastic film.

To Store In Freezer: Wrap tightly in freezer paper, plastic film, or foil. Freeze.

Leftovers: Freeze or refrigerate as soon as possible.

Canned Meat And Poultry: Read the label, refrigerate if necessary. Otherwise, store in cool, dry place. Do not buy products in bulging or dented cans.

STORAGE TIME *Eating quality drops after time shown*	In refrigerator at 35° to 40° F. DAYS	In freezer at 0° F. MONTHS
FRESH MEATS		
Roasts (Beef and Lamb)	3 to 5	6 to 12
Roasts (Pork and Veal)	3 to 5	4 to 8
Steaks (Beef)	3 to 5	6 to 12
Chops (Lamb)	3 to 5	6 to 9
Chops (Pork)	3 to 5	3 to 4
Ground and Stew Meats	1 to 2	2 to 3
Variety Meats	1 to 2	3 to 4
Sausage (Pork)	1 to 2	2 to 3
PROCESSED MEATS		
Bacon	7	1
Frankfurters	7	½
Ham (Whole)	7	1 to 2
Ham (Half)	5	1 to 2
Ham (Slices)	3	1 to 2
Luncheon Meats	3 to 5	Freezing not recommended
Sausage (Smoked)	7	
Sausage (Dry and Semi-Dry)	14 to 21	
COOKED MEATS		
Cooked Meats and Meat Dishes	3 to 4	2 to 3
Gravy and Meat Broth	1 to 2	2 to 3
FRESH POULTRY		
Chicken and Turkey (Whole)	1 to 2	12
Chicken (Pieces)	1 to 2	9
Turkey (Pieces)	1 to 2	6
Duck and Goose (Whole)	1 to 2	6
Giblets	1 to 2	3
COOKED POULTRY		
Pieces (Covered with Broth)	1 to 2	6
Pieces (Not Covered)	1 to 2	1
Cooked Poultry Dishes	1 to 2	6
Fried Chicken	1 to 2	4

Lesson 2: Meats: Principles
of Moist Heat Cookery

Module II: Meats and More

.I. Instructor preparation for class activities

A. Marinate meat for Sauerbraten--24-36 hours. Put on to simmer 2 hours before class

B. Start beef cubes for stew and pork for chop suey

C. Assemble equipment needed to prepare recipes chosen to illustrate moist heat cookery

D. Duplicate sufficient copies of handouts
   1. Recipe for Sauerbraten, Winfield State Hospital
   2. Evaluation of Meats
   3. Scorecard for Moist Heat Meat Cookery

E. Recipes for this lesson are from Food for Fifty, except for Sauerbraten

F. Market order--See recipes of items to be prepared

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 2. Meats: Principles of Moist Heat Cookery

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
Introduction: Assign participants to groups according to color of folder, also, divide responsibilities within groups	See student handbook
I. Meats suitable for moist heat cookery A. Less tender cuts of beef, such as pot roast, chuck beef stew, short ribs, brisket, round steak and soup bones B. Collagen is changed to gelatin by moist heat	
II. Methods	Review moist heat methods, page 11: "Basics About Beef"
A. How to braise meat--see pages 263 and 264: Food for Fifty 1. Explanation of principle. Is common, but often called "roasting with lid on" 2. Cuts and grades suitable 3. Common tenderizing methods a. Marinating b. Mallet c. Commercial powders and liquids d. Moist heat method--low temperature 4. Equipment: heavy pan with close-fitting lid 5. Procedure a. Seasoning b. Precooking or frying--brown on all sides in small amount of fat c. Basting--add small amount of water d. Temperature--cook in 300° F. oven or on stove e. Fricassees--such as fowl, rabbit or veal 6. Testing for doneness; add vegetables just long enough before to be cooked by serving time 7. Care and storage 8. Serving a. Portion control b. Garnishes	Assign recipes to groups--adjust to 25 servings Prepare "Swiss Steak", page 266: Food for Fifty, substituting Spanish sauce, page 466, for gravy Prepare Sauerbraten--recipe from Winfield State Hospital Demonstrate tenderizing methods: Marinating Mallet Enzyme powder--use on a piece of Swiss steak List brands available Discuss effects of excessive amounts

Lesson 2. Meats: Principles
of Moist Heat Cookery

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
B. How to prepare stews	
1. Explanation of principles	
2. Suitable cuts and grades	
3. Preparation--examine recipe in Food for Fifty	Prepare "Beef Stew", page 269: Food for Fifty
4. Procedure	
a. Seasoning	
b. Care during cooking--do not over stir	
c. Temperature--simmer--do not boil; do not scorch	
d. Timing--use less water than simmering; liquid in a stew should be thick--vegetables usually added	
5. Variations	
a. Irish (Blond stew)	
b. Brown stews	
6. Serving	Participants suggest items to complete a menu using stew as main dish
C. How to simmer meat--see pages 264 and 265: Food for Fifty	
1. Explanation of cooking principle	Simmer "Corned Beef and Cabbage", page 270: Food for Fifty
2. Cuts and grades suitable	
3. Variations in terminology	
a. Parboiling	
b. Steaming--prebrown meat, do not sear, steam in liquid, 375° F. oven	Steam "Chop Suey", page 272: Food for Fifty (use pork and beef)
c. Pressure cooking	
d. Stewing	
e. Poaching	
4. Preparation	
a. Fresh meat	
b. Corned beef	
5. Procedure	
a. Seasoning	
b. Care in cooking--bring water to a boil and add meat; cover	
c. Temperature--use a meat thermometer for internal temperature (cook just below boiling point)	
6. Test for doneness	
7. Serving	
a. Portion control	Discuss tools to use in portioning the foods prepared in this class
b. Garnishes	

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 2: Meats: Principles of Moist Heat Cookery

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
III. Summary of principles of moist heat cookery and evaluation of prepared items using scorecard	Handout 1: Evaluation of Meats Handout 2: Scorecard for Moist Heat Meat Cookery
A. Texture	
B. Tenderness	
C. Appearance	
D. Color	
E. Flavor	
F. Yield	
IV. Storage of cooked meats	Participants are to refrigerate or freeze prepared products according to accepted practices
V. Summarize benefits of moist heat cookery	
A. Less expensive cuts may be used successfully	Examples: beef chuck, beef rounds, beef stew
B. Less tender cuts may be made more palatable	Examples: beef brisket
C. Variety of preparation	Examples: beef rounds may be cooked by moist and dry heat, resulting in different flavors
D. Seasonings may be added--the flavors blend and develop in the moisture	
Introduce next week's lesson	
Assignment: At work this week participants are to observe meat preparation using moist heat cookery methods	
	From a list of recipes using dry heat cookery methods, adjust recipes to desired quantity and prepare market order

From: Winfield State Hospital and Training Center, Winfield, Kansas

SAUERBRATEN

INGREDIENTS	50 SERVINGS
Boned beef chuck	13 #
Red wine vinegar	3 cups
Apple juice or red wine	1 cup
Water	3 cups
Bay leaf	2 each
Peppercorns	10 each
Whole cloves	6 each
Salt	4 Tbsp.
Onions, sliced	4 each
Shortening	½ cup
Flour	10 Tbsp.
Margarine	4 oz.
Sugar	2 Tbsp.
Gingersnaps, crushed	3/4 cup

1. Combine the vinegar, apple juice, water, bay leaf, peppercorns, cloves, salt and onion.
2. Keep meat in the refrigerator, covered with the marinade for 1-3 days, turning occasionally
3. Remove meat from marinade, wipe dry with paper towels and brown in the shortening over high heat, sprinkling with 2 Tbsp. flour.
4. Strain and add marinade, cover, lower heat and cook gently until meat reaches 150° internally.
5. Remove meat and keep in warm place. Pour off the stock. Slice meat.
6. In the same kettle, melt margarine, add the remaining flour and the sugar, stirring until smooth and browned. Slowly add the stock, cooking until smooth and thickened.
7. Add the crushed gingersnaps, and cook until dissolved.
8. Replace meat in the sauce and cook ½ hour longer. (15 minutes in the Forge).
9. Tastes better the second day.

EVALUATION OF MEATS

It is difficult to give one standard for cooked meat because of the wide variety of meats and the many ways of cooking them. All meat should be of good flavor and pleasing appearance. Drippings should be rich and juicy. The meat should be moist, not dry or crumbly, and have a degree of firmness consistent with its doneness. It should be tender and not pulpy, stringy, or excessively soft, greasy, or oily.

The color should be natural to the meat, cooking and degree of doneness. There should be no burned portions or any burned taste. Roasts should be well browned. Veal roasts--reddish brown; pork roasts--uniformly rich brown surface. Roasted poultry and the other surface of lamb and pork roasts should be crisp, not dry or tough.

Sliced meats should be firm, juicy, and tender and hold its shape. Broiled exterior should be crisp but not brittle, with crispness dictated by personal preference. Browned meats should have a rich brown color with a well-developed flavor and aroma. Broiled bacon should be crisp but not brittle, with crispness dictated by personal preference.

Braised meats when done should be tender and juicy, not stringy, and should hold their shape and not fall apart. There should be a rich gloss from the drippings or gravy over the surface of the meat, and pieces should be uniform, even, symmetrical, and attractive. Unbrowned meats lack the color and the characteristic flavor developed by browning, but otherwise they have qualities similar to browned braised meat.

Deep fried or sauteed products should have a crisp, deep golden brown surface and possess a sweet, nutty flavor. They should have a soft, rich glaze or sheen. These properties may be varied by the frying fat used, for some give more crispness and a deeper color than others.

Covered fried products should have crusts which adhere tightly and are tender, even, and not too thick. The product should not be greasy, and the inside should be moist, hot, succulent, and completely cooked. Outer crusts or surfaces should be tender; edges should not be overcooked.

Evaluate fried foods on the basis of appearance, golden-brown surface, and uniformity of color and shape; texture should be crisp, tender, and light; flavor should be true, pleasing and appetizing.

From: Quantity Food Production, Kotschevar,
L.H., Cahners Publishing Co., 1974.

SCORECARD FOR MOIST HEAT MEAT COOKERY

DIRECTIONS: List the products to be evaluated in the left column. Select and record the word(s) which best describe them. Evaluate against the characteristics of a standard product using a 5-point scale--1=least desirable, 5=most desirable.

CUT OF MEAT AND METHOD OF COOKING	EXTERIOR Plump Slightly moist Slightly shrunken Shrunken Dry Very dry Well browned Pale Burned Fat well cooked raw greasy	INTERIOR Bluish red Cherry red Pink Grey Brown Very juicy Juicy Dry Very dry	TENDERNESS Tender Slightly tender Tough Very tough Fibers tough, crumbly Tough and solid

Characteristics of High Quality Meat:

Appearance: All cooked meat is opaque and moist. Color of cooked meat--outside: rich brown; interior: beef, from deep red or pink (rare meat) through a light pink (medium) to a light gray or brown (well done); pork, from almost white to light gray with certain muscles being light brown; veal, predominately light gray.

Tenderness: Some resistance to chewing, but sample should be easily masticated.

Juiciness: Free-flowing juice in cuts cooked to rare stage changing to noticeable moistness in cuts cooked to the well-done stage.

Flavor: Typical for cut of meat; meat flavor should predominate.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 3: Meats: Principles of Dry Heat Cookery

Module II: Meats and More

I. Instructor preparation for class activities

A. Before class prepare top round roast in a 325° F. oven on a rack with a meat thermometer to an internal temperature of 140° F. Time this so students can take it out of oven at 140° F. and record temperature every 5 minutes for 30 minutes.

B. Prepare Food for Fifty recipe of Meatloaf, dividing it into 5 loaf pans. Bake 4 pans at 325° F. to an internal temperature of 160° F. Bake one at 425° F. to an internal temperature of 160° F. See Handout 1: Scorecard for Meatloaf.

C. Assemble equipment needed to prepare recipes chosen to illustrate dry heat cookery

D. Market order
   10 pounds ground beef for meatloaf
   10 pounds top round
   5 each pork chops, cut 3 per pound
   Ham slice, center cut ½ inch thick
   1 pound pork shoulder, strips or cubes
   5 each pork cutlets, cut 4 per pound
   5 small Rib eye steaks, 3/4 inch thick
   Other ingredients to prepare recipes

E. Duplicate sufficient copies of handouts
   1. Scorecard for Meatloaf
   2. How to Operate a Food Slicer
   3. How to Clean a Food Slicer
   4. Scorecard for Dry Heat Meat Cookery

FOOD SERVICE EMP EE SHORT COURSE

Lesson 3: Meats: Principles of Dry Heat Cookery

Module II: Meats and More

LESSON CONTENT

I. Meats to be cooked with dry heat: tenderloin, sirloin, ground beef, rib roast, beef chops, bacon, weiners, pork chops and steaks

II. Methods of dry heat cookery--see pages 253-259: Food for Fifty

- A. How to roast meats
  1. Suitable grades and cuts
  2. Care and storage before roasting
  3. Explanation of roasting principles
     - a. Beef--low temperature, meat thermometer, no more than 160° F.
     - b. Pork--slash fat edges to prevent curling, avoid excess fat in cooking, cook by dry heat, cook to well-done stage (170°-180° F.)
  4. Preparation
     - a. Fresh meat--salt meat after cooking
     - b. Frozen meat--proper thawing procedures
  5. Equipment
     - a. Roasting pans
     - b. Thermometer (Meat)--demonstrate use
     - c. Other--rack
  6. Procedure
     - a. Seasoning--no need, only slight penetration of flavors
     - b. Roasting temperature--low to medium low 300°-325° F.
     - c. Time--if using convection oven, lower temperature by 50° F.
  7. Test for doneness
     - a. Rare--140° F. internal temperature
     - b. Medium--160° F. internal temperature
     - c. Well-done--175° F. internal temperature
  8. Methods of serving
     - a. Portion--size
     - b. Tools
     - c. Gravies
     - d. Garnishes

CLASS ACTIVITY AND EVALUATION

Meat charts: Beef Chart: See Handout 1:3 "Basics About Beef"
Pork Chart: See Handout 1:4

Cooperative demonstration by instructor and students:
Compare meatloaves baked at 325° F. and 425° F.
Use Handout 1: Scorecard for Meatloaf
Students:
Weigh each meatloaf. Instructor calculate percentage of shrinkage and cost per serving of cooked weight
Measure drippings in each pan and compare amount and color
Score each meatloaf for flavor, texture, tenderness and eye appeal
Discuss methods of portioning meatloaf
Demonstration on roasting beef:
Note: The following demonstrations are to be done by groups of students. Pre-preparation may be done early in lab period, with demonstration and evaluation done before the rest of the group.
See Instructor preparation for class activities
Discuss results and implications
Cover and save for slicer demonstration during last hour of this class period
Bake ham slices with pineapple, see page 299: Food for Fifty

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 3: Meats: Principles of Dry Heat Cookery

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
9. Care of meat a. After roasting--allow to remain at room temperature 20-30 minutes after removal from heat. (Gelatin can "set"--makes slicing easier b. During serving period c. Storage	Students demonstrate slicing roast beef Handout 2: How to Operate a Food Slicer Handout 3: How to Clean a Food Slicer
B. How to broil meats, see pages 260 and 261: Food for Fifty 1. Explanation of principle a. Cook to half doneness b. Turn only once 2. Cuts suitable a. Beef b. Pork 3. Preparation a. Fresh meat b. Frozen meat 4. Equipment a. Fuels used--gas, electricity, charcoal grill b. Manipulation of broiler--distance of meat from broiler depends on thickness of meat. May need to turn thick pieces twice c. Tools--tongs; never pierce with fork 5. Procedure a. Seasoning b. Searing c. Temperature d. Time 6. Test for doneness Steaks: Rare--bright pink Medium--pink brown Well-done--light brown Use tongs 7. Methods of serving a. Sauces, gravies, butter and garnishes b. Broiled accompaniments	Broil Rib eye steaks--5-6 ounces each

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 3: Meats: Principles of Dry Heat Cookery

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
C. How to pan fry (saute) meats 1. List cuts suitable for pan frying 2. Preparation techniques--compare with pan broil 3. Equipment and utensils 4. Procedure a. Seasoning b. Browning--use small amount of fat c. Temperature--cook on hot surface; don't cover d. Timing 5. Testing for doneness 6. Methods of serving a. Sauces to accompany sauteed meats. Examples	Pan fry or pan broil pork chops, see page 262: _Food for Fifty_
D. How to fry meats 1. Principles of frying 2. Cuts and grades suitable 3. Preparation a. Fresh meats b. Frozen meats c. Cured meats 4. Procedure a. Seasoning b. Dredging or Breading--see page 75: _Food for Fifty_ c. Temperature--hot surface with small amount of fat, turn only once d. Timing 5. Testing for doneness 6. Serving	Oven fry breaded pork cutlet, see page 295: _Food for Fifty_ (recipe for breaded pork chops) Demonstrate use of 2 hands in breading pork cutlets Stir fry pork strips or cubes
	Handout 3:4 Scorecard for Dry Heat Meat Cookery
E. Causes of beef shrinkage 1. Higher temperature 2. Longer cooking time 3. Cooking too quickly 4. Cooking too done	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
F. Reasons for avoiding shrinkage	

F. Reasons for avoiding shrinkage
1. Loss of moisture
2. Loss of weight
    - a. Looks smaller
    - b. Looks unappetizing
3. Increase in cost
    - a. Per ounce of meat
      Note: average shrinkage of beef is a loss of 25% of original weight
    - b. Per portion

EXAMPLE:

Beef as purchased=100 pounds
Cost of beef per pound=$1.50
Total cost of beef=$150.00
Cost of 4 ounce portion=$ .375 (before cooking)

25% shrinkage--average and acceptable--from moderate cooking time and temperature:
Beef as purchased=100 pounds
Cooked beef after 25% shrinkage=75 pounds
Total cost of beef as purchased=$150.00
Cost of beef per pound before shrinkage=$1.50
Cost of beef per pound after shrinkage=$2.00
Loss in cooking beef=$ .50 per pound
Cost of 4 ounce portion=$ .50

40% shrinkage--higher temperature and longer cooking time
Beef purchased=100 pounds
Cooked beef after 40% shrinkage=60 pounds
Total cost of beef purchased=$150.00
Cost of beef per pound before shrinkage=$1.50
Cost of beef per pound after shrinkage=$2.50
Loss in cooking beef=$1.00 per pound
Cost of 4 ounce portion=$ .625

Use this example on the board for discussion

Assignment: Bring at least 2 pictures of poultry prepared by 2 different methods

SCORECARD FOR MEATLOAF

	Wt. before Cooking (oz.)	Volume of Drippings (cups)	Color of Drippings	Appearance of Meat	Weight after cooking
Meatloaf roasted at 325°F. to internal temp. of 160°F.					
Meatloaf roasted at 425°F. to internal temp. of 160°F.					

Taste the two meatloaves. Which one is juicier?________________________

Slice each meatloaf into 3 oz. portions. How may servings did you get from the meatloaf cooked at 325°F?__________________ From the roast cooked at 425°F?__________________

Compare the weight loss: weight before cooking--weight after cooking.

HOW TO OPERATE A FOOD SLICER

Food Slicer - A food slicer is an adjustable power knife that contains a revolving blade. Food is passed across the revolving blade to be sliced. It can be used to slice meats, vegetables, fruits, and cheese.

1. The operation of a slicer

    a) Check to see that the switch is in the "off" position.
    b) Plug in the slicer.
    c) Place food in the carriage and hold it firmly in place by means of the food holder.
    d) Adjust the blade control indicator for desired thickness of slice.
    e) Turn the switch on.
    f) Move the carriage back and forth across the blade, using the handle.
    g) When finished, turn the switch off and unplug the slicer.

2. The safe use of a slicer

    a) All electrical connections should conform with the National Electrical Code Requirements and other state and local requirements.
    b) When cleaning a slicer, do not let water come in contact with the motor or electrical wiring.
    c) Never use a slicer when the blade guard is off.
    d) Always keep hands away from the blade when the machine is in operation; never catch food with hands.
    e) Keep the plug out of the socket when the machine is not in use. Be certain the guard is on the slicer before putting the plug in the socket.
    f) Always make certain the switch is off and the plug is pulled out of the socket before cleaning.
    g) When disconnecting a slicer, pull the plug; do not pull the cord.
    h) Never use a metal instrument to scrape food particles from the slicer knife.
    i) Make sure your hands are dry before operating the slicer.
    j) Be sure the cord is dry and free from grease.
    k) Do not use very hot water or steam in cleaning the slicer.
    l) Keep the blades sharpened according to the manufacturer's instructions.

HOW TO CLEAN A FOOD SLICER

When	How	Use
After each use	1. Turn off machine	
	2. Remove electric cord from socket.	
	3. Set blade control to zero	
	4. Remove meat carriage (a) Turn knob at bottom of carriage	
	5. Remove the back blade guard (a) Loosen knob on the guard	
	6. Remove the top blade guard (a) Loosen knob at center of blade	
	7. Take parts to pot-and-pan sink, scrub.	Hot machine detergent solution, going brush
	8. Rinse	Clean hot water, 170 F for 1 minute. Use double S hook to remove parts from hot water
	9. Allow parts to air dry on clean surface	
	10. Wash blade and machine shell Caution: Proceed with care while blade is exposed.	Use damp bunched cloth* dipped in hot machine detergent solution
	11. Rinse	Clean hot water, clean bunched cloth
	12. Sanitize blade, allow to air dry	Clean water, chemical sanitizer, clean bunched cloth
	13. Replace front blade guard immediately after cleaning shell (a) Tighten knob	
	14. Replace back blade guard (a) Tighten knob	
	15. Replace meat carriage (a) Tighten knob	
	16. Leave blade control at zero	
	17. Replace electric cord into socket	

*Fold cloth to several thicknesses

SCORECARD FOR DRY HEAT MEAT COOKERY

DIRECTIONS: List the products to be evaluated in the left column. Rate each by choosing the word(s) which best describe it. Record in the appropriate column. Evaluate against the characteristics of a standard product.

CUT OF MEAT AND METHOD OF COOKING	EXTERIOR Plump Slightly moist Slightly shrunken Shrunken Dry Very dry Well browned Pale Burned Fat well cooked Raw Greasy Oily Hard	INTERIOR Bluish red Cherry red Pink Grey Brown Very juicy Juicy Dry Very dry	TEXTURE Fine Coarse Tough fibers Tough connecting tissue Crumbly Tough and solid	TENDERNESS Tender Slightly tender Tough Very tough Fibers tough Crumbly
Roast				
Bake				
Broil				
Pan fry				
Pan broil				
Oven fry				
Stir fry				

Lesson 4: Principles of Poultry Cookery Module II: Meats and More

I. Instructor preparation for class activities

A. Assemble equipment
   1. Deep fat fryer

B. Market order
   1. Large roasting chicken or small turkey--5-6 pounds
   2. Whole dressed chicken to be cleaned by student
   3. 1 cut-up chicken for oven frying
   4. Frozen chicken pieces for deep fat frying (breaded)
   5. Stewing chicken
   6. Other items as necessary for recipes chosen by students

C. Duplicate sufficient copies of handouts
   1. Deep fat fryer
   2. Cleaning and safety
   3. Scorecard for poultry cookery

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 4: Principles of Poultry Cookery Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Common types	See: West and Wood, Food Service in Institutions, 4th Edition, pages 120-123--grades of poultry Food for Fifty, pages 332-334
A. Chicken, Duck, Goose, Turkey, Squab, Guinea	
B. Since 1968, poultry use in Federally funded programs must be inspected for wholesomeness (School Food Service, Congregate Nutrition Programs)	
II. Market forms	Make a collage or poster of pictures of poultry served in various ways--each student bring 2 pictures
A. Whole--the larger the bird, the higher proportion of meat	
B. Parts (quarters, halves, eighths)	
C. Boneless (breast)	
D. Roll	
E. Cooked, pulled I.Q.F. chicken	
F. Cooked, diced, I.Q.F. turkey and chicken	
G. Canned, boned or whole small chicken	
H. Others	Class will discuss how they buy chicken
III. Service--a year-round menu item	Ask class how they serve poultry
A. Main dish--a single entree or a casserole	
B. Salad--either hot or cold	
C. Soup	
D. Sandwich--either hot or cold	

FOOD SERVICE EMP[illegible]EE SHORT COURSE

Lesson 4: Principles of Poultry Cookery   Module II: Meats and More

LESSON CONTENT

IV. Common classes

Class of poultry refers to physical characteristics due to age and sex. Example--A broiler/fryer chicken is under 12 weeks, either sex, under-meated with smooth, textured skin and flexible breastbone cartilage. The class often indicates the preferred method of cooking.

- A. Broiler
- B. Fryer
- C. Roaster
- D. Stewer
- E. Factors for determining quality in poultry
  1. Age
  2. Sex
  3. Weight
  4. Appearance of head, feet, breast, wings, legs and skin

V. Common practices for storing

- A. Fresh
  1. Requires strict attention, because it perishes quickly
  2. Refrigerate quickly after receiving
     a. Use ice
     b. Store in coldest part of cooler
  3. Keep no longer than 1-2 days
- B. Frozen (Keep poultry frozen before using if possible)
  1. Perishes quickly during thawing process
  2. Keep frozen 1-2 days before service--remove only what is needed
  3. Thaw in refrigerator--DO NOT THAW AT ROOM TEMPERATURE Remove from carton and thaw in original wrappings in refrigerator at 35-40° F.

or

CLASS ACTIVITY AND EVALUATION

Class discussion of classification of poultry used in their facility and recipes used with each classification

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
Thaw under cold, running water--never use warm or hot water. Chicken will thaw in 1-2 hours. Turkey and larger birds will thaw in 2-6 hours 4. Allow the following times for thawing poultry in refrigerator: a. Chicken, whole or cut-up--1-2 days b. Turkey whole, 18 pounds and over--2-3 days whole, under 18 pounds--1-2 days parts--about 1 day breasts--overnight 5. Microwave according to directions 6. Cook as soon as possible after thawing--never hold thawed poultry for more than 24 hours. Do not refreeze 7. Freeze-dried chicken may be stored at room temperature until rehydrated; then refrigerate same as fresh or frozen poultry	
VI. Cleaning poultry A. Pull out feathers not originally removed--remove giblets B. Wash with cold, running water C. Drain D. Refrigerate until ready for use	Student cleans chicken with guidelines given by instructor
VII. Factors affecting methods A. Age of bird 1. Cook older birds with moist heat 2. Cook younger birds with dry heat B. Size of bird 1. Cook larger birds with dry heat 2. Cook smaller birds with moist heat Note: Younger and larger birds have a high degree of fat, therefore, they are cooked with dry heat	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VIII. General principles A. Poultry cooked so that finished product will be juicy, tender and evenly done to the bone B. Cook at low temperature (simmer on top of range or roast at 325° F. in oven) to soften connective tissues, but not to harden muscle tissue C. Use cooking methods appropriate for tenderness of the bird D. Use cooked poultry (refrigerated) within 24 hours	Test for doneness Turkey: internal temperature Note: place thermometer in thigh for whole birds Flesh--185° F. Breast or thigh--175° F. Stuffing--165° F. (in separate pan--not stuffed in bird Chicken: use time tables and temperature control See page 335: Food for Fifty
IX. Methods	
A. Roast--325° F. 1. Whole turkeys, turkey breasts or turkey rolls 2. To reduce cooking time of whole turkeys, cut into parts 3. Chicken parts or quarters may be roasted (325° F.) 4. Use meat thermometer--turkey done when thermometer reads 180° F. in inner thighs of whole turkey or 170° F. in turkey breast 5. Stuffing is to be baked separately	Roast 4-5 pound whole chicken--use meat thermometer and timetable. See pages 337 and 338: Food for Fifty Evaluate doneness: Internal temperature of bird Use of timetable as general guide Allow to remain 20-30 minutes after removal from heat. This allows gelatin to "set" and makes it easier to slice
B. Broil 1. Adjust rack to place upper surface of poultry approximately 3 inches from source of heat 2. Use only pieces 1-3 inches thick and tender cut 3. Wipe surfaces with paper towels to remove excess water and brush with fat 4. Use tongs rather than fork to turn to reduce loss of juices	Broil ½ chicken--cut whole chicken in half; season and brush with oil or melted fat. Broil 20-30 minutes or until brown; turn. Brush again with fat and broil 15-25 minutes longer. See pages 261 and 336: Food for Fifty. Allow 60-75 minutes broiling time for pieces of small turkeys
C. Oven frying 1. This is a popular method of preparing chicken in quantity 2. Pour fat over chicken parts, place on a greased pan, bake at 400° F. (maximum) for 45 minutes 3. If cooking with convection oven, reduce oven temperature by 50° F. and shorten cooking time by 1/3	Oven fry several pieces of chicken from scratch and from precooked. Coat poultry pieces with seasoned flour and then dip in melted fat to coat both sides. Place in greased baking dish, skin side down. Cook 30 minutes, turn and cook 20-30 minutes longer. See page 336: Food for Fifty

FOOD SERVICE EMP[illegible]EE SHORT COURSE

Lesson 4: Principles of Poultry Cookery Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
D. Deep-fat frying Coat poultry pieces with thin batter, flour or crumbs. Use deep-fat fryer and fat enough to cover pieces well. Heat fat to 365° F.; check temperature with thermometer. Fry a few pieces at a time for 10-15 minutes. Drain in basket or on paper towels. Larger pieces can be browned in deep fat, placed in baking pans and finished in a 325° oven for 20-30 minutes	Handout 1: Deep Fat Fryer See Preparing Food for Deep Fat Frying, page 75: Food for Fifty See Deep Fat Frying Temperature, page 76: Food for Fifty Prepare Deep-Fat Fried Chicken, pages 262, 336 and 339: Food for Fifty Compare deep fat fried chicken from scratch, with redi-breaded and redi-fried chicken that have been heated in the oven
X. Methods of Moist Heat Cookery A. Braising 1. This method used for older, tougher poultry 2. Dredge in seasoned flour and brown in hot fat in heavy skillet. Add water or clear chicken broth, cover and cook in oven at 325° F. Braising temperature shouldn't exceed 185° F. B. Steaming 1. Poultry for a la king, curries and creamed dishes can be steamed 2. Use of the compartment steamer will greatly reduce the cooking time	
C. Stewing 1. Poultry can be stewed in compartment steamers or steam-jacketed kettles 2. Poultry prepared in this way can be used in stews, a la king and curries 3. Stewing temperatures should not exceed 185° F. 4. For serving: Cool whole chicken for 20-30 minutes; slice and serve 5. For storage: Cool cooked poultry on wire rack until cool enough to handle. Remove meat from bone. Spread pieces of meat in one layer to cool. When cool, wrap loosely in foil. Store in refrigerator (36-40° F.) Use within 2 days after cooking	See Stewed Chicken, page 336: Food for Fifty Stew a chicken in preparation for Chicken Fricassee, page 342: Food for Fifty Season and place in deep kettle with just enough water to cover. Bring to boil. Reduce heat, cover kettle and simmer until meat is tender--2-3 hours Note--Freeze Stewed Chicken for chicken salad in Lesson 6 Handout 2: Scorecard for Poultry Cookery
XI. Serving poultry	

DEEP FAT FRYER

HOW TO USE

1. The fat should cover the uppermost coil at all times when fryer is in operation.
2. Turn switch "on".
3. Set thermostat at desired temperature. Temperature at 400 Degrees will burn fat.
4. Do not overload basket. Frozen food items or heavy items such as chicken will stick together if too many pieces are placed in the basket at the same time.
5. Have food as free of moisture as possible before frying. Excess moisture causes fat to foam, spatter, or boil over. It also causes some fats to break down and shorten their usual life. Salt will also break down fat.
6. Turn "off" when not in use.
7. Avoid excess breading from accumulating in fat by shaking off excess breading in strainer or colander before placing food in fryer.
8. Do not lower basket into fryer until light goes off. This indicates the fat has heated to the desired temperature indicated on the thermostat.
9. Frying temperature will vary with size and temperature of food pieces and the amount of food placed in the fryer at one time. If overloaded, food may become grease soaked. If food is frozen, use lower temperatures listed and allow additional cooking time.
10. Vegetables breaded before cooking should be drained on absorbant paper after cooking to eliminate any excess fat.
11. Vegetables should be deep fat fried in small batches just prior to serving and replenished as needed. Holding on steamtables wilts a crisp, french-fried vegetable rapidly.

CLEANING

1. Regular draining and cleaning necessary.
2. The heating element should be turned off.
3. Cool fat at 150 degrees
4. Drain fat out of fryer (before returning wash container and baskets).
5. When elements and container appear "gummy", follow this procedure:
    1. Remove fat
    2. Fill to fat level with hot water
    3. Add 1 cup vinegar
    4. Add 1/2 cup dishwashing detergent
    5. Turn on heating element and bring to boil; boil 5-10 minutes.
    6. Clean; rinse twice

SAFETY

1. Do not turn temperature to 400 degrees.
2. Do not throw water on a fat fire. Replace metal cover.
3. Drain water or moisture off food before placing in fryer.
4. Avoid overloading.
5. Clean up any grease on floor immediately
6. Practice safety when transferring fat.

SCORECARD FOR POULTRY COOKERY

DIRECTIONS: List the products to be evaluated in the left column. Select and record the word(s) which best describe them. Evaluate against characteristics of a standard product using a 5-point scale. 1=least desirable, 5=most desirable.

PRODUCT AND METHOD OF PREPARATION	APPEARANCE Plump Slightly moist Slightly shrunken Dry Well browned Pale Burned Flesh No red Slightly red Bright red Juicy Dry Very dry	TEXTURE AND TENDERNESS Crisp Limp Fat Well cooked Uncooked Soggy Tender Slightly tough Easily cut Falling apart Tough and solid Tough	PALATABILITY Good color Under done Burned Good flavor Raw Strong Tasteless Greasy

Lesson 5: Principles of Fish Cookery   Module II: Meats and More

I. Instructor preparation for class activities

A. Obtain a film on fish and shell fish preparation

B. Duplicate sufficient copies of handouts
   1. Some Facts About Fish Cookery
   2. Scorecard for Fish Cookery

C. Market order:
See lesson plan. Select fish to demonstrate classes, market forms, and methods of cookery in this lesson. Quantities may be small for student demonstrations.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 5: Principles of Fish Cookery **Module II:** Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Classes A. Fin 1. Mackerel 2. Cod 3. Flounder 4. Perch 5. Salmon B. Shellfish 1. Lobster 2. Clams 3. Oysters 4. Shrimp 5. Scallops	Handout 1: Some Facts About Fish Cookery
II. Market forms A. Fresh B. Frozen C. Canned D. Cured E. Dried F. Smoked G. Pickles III. Fat content A. Lean--moist heat cookery 1. Catfish 2. Cod 3. Flounder 4. Haddock 5. Sole	See pages 232-236: Food for Fifty

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
B. Variable--dry or moist heat cookery 1. Halibut 2. Salmon	
C. Fat--dry or moist heat cookery 1. Mackerel 2. Trout 3. Tuna	
IV. Thawing A. In refrigerator just prior to cooking or B. In unopened package under cold, running water C. Fish portions and fish sticks should not be thawed before cooking	See Fish Buying and Cooking Guide, page 235: Food for Fifty
V. Principles of cookery A. Fish by nature is tender and free of tough fibers, so it should be cooked quickly. Cooked fish should be juicy, flavorful, tender and is done when it flakes easily B. Avoid overcooking--fish should generally be cooked at a moderate temperature. Fish should be cooked rapidly enough to retain juices and moisture, but slowly enough to insure thorough cooking C. Coat all fried fish 1. Breading 2. Batter D. Use gentle heat when possible, but cook quickly E. Do not depend on fish meat to change color for test of doneness--Note: The test for fish doneness is flaky meat	Demonstration on cookery: Note: The following demonstrations are to be done by groups of students. Pre-preparation may be done early in lab period, with demonstration and evaluation done before the rest of the group. Film: Fish and Shellfish Preparation (Super 8 mm cassette)--FNIC

Lesson 5: Principles of Fish Cookery **Module II: Meats and More**

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VI. Methods	
A. Baking 1. Fish suitable--any of the fat fish. Lean fish will need added fat or sauces 2. Preparation--Grease pan or use foil to prevent sticking Paint or dot with margarine to prevent drying out	Prepare Baked Fish Fillets, page 240: Food for Fifty
3. Procedure--Seasoning Temperature--cook at 350°-500° F. (recipes vary) 4. Timing--Cook 6-11 minutes per pound Cook frozen fish 9-16 minutes per pound 5. Test for doneness--flaky meat. Do not overcook. Overcooked fish is tough and rubbery 6. Methods of serving	Distinguish between a fish fillet and a fish steak
B. Broil 1. Fish suitable--preferably fat fish that are 3/4 inch-2 inches thick (Thinner pieces are too fragile, and thicker pieces will not get done) 2. Preparation--Paint lean fish with oil 3. Procedure--Cook on preheated broiler pan with rack Place 2 inches-4 inches from heat Broil until half done and brown Turn fish 4. Test for doneness--flaky	Broil sole fillets: Sprinkle with salt and pepper Place skin side down on well-greased, preheated broiler Cook about 10 minutes Turn skin side up long enough to brown and crisp Serve with melted butter and chopped parsley
C. Pan fry 1. Use whole fish, fillets or steaks 2. Preparation--heat pan (if smokes, reduce heat) 3. Procedure--Bread fish in flour, cornmeal or fine bread crumbs Add small amount of fat to cooking surface Cook on medium heat of 300°-350° F. Heat cooking surface	Pan fry perch fillets--follow directions at left

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
Place single layer of fish on cooking surface Cook 5-6 minutes or until brown Turn fish Cook 4-5 minutes or until brown 4. Test for doneness--meat will flake when pushed aside	
D. Deep fat fry 1. Fish suitable 2. Preparation--Bread fish Shake excess breading from fish 3. Procedure--Fry fish at 350°-375° F. Cook until golden brown Lift out in basket Drain well	Deep fry haddock fillets or shrimp, page 70: *Food for Fifty*
E. Poaching--for fillets or thick slices of fish 1. Lean fish is less likely to fall apart 2. Preparation--Place a single layer of fish in shallow, wide pan--season with herbs Barely cover fish with liquid such as milk Fish is sometimes wrapped in cheesecloth	Poach flounder fillets, page 281: *Food for Fifty* See Acidulated Water and Court Bouillon, page 234: *Food for Fifty*
3. Procedure--Bring to a boil, reduce heat Simmer until fish flakes 4. Test for doneness--Fish flakes easily when tested with a fork	Order for each participant--"Basic Fish Cookery", Test Kitchen Series Number 2, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C., 1959
VII. Garnishes suitable for fish, page 251: *Food for Fifty*	
VIII. Evaluation of fish preparation methods	Handout 2: Scorecard for Fish Cookery
IX. Summary--See Quantity Food Production, Knight and Kotschevar, pages 376-394	

SOME FACTS ABOUT FISH COOKERY

WHAT	WHY
1. Fat fish such as salmon, trout, tuna, whitefish, and mackerel are best baked, broiled, or pan fried.	1. The natural fat content of fish high in fat prevents them from becoming dry.
2. Lean fish include shellfish, cod, haddock, flounder (sole), halibut and are best when poached or steamed.	2. In preparing fish in which the fat content is low, moist method is satisfactory.

Dry Heat Method

3. If lean fish are broiled or baked, fat is often added; melted butter, oil, or rich sauces are frequently used.	3. Fat is added to lean fish to prevent them from becoming dry.
4. Frying in a pan or deep fat is popular method of cooking all fish.	4. Frying adds fat and crispness to fish.
Oven-fry fish by dipping serving portions in salted milk (1 c. milk / 2 t. salt), rolling in fine crumbs, placing on greased baking pan, pouring on melted fat or oil, and cooking on the top shelf of the oven until tender and brown.	Oven-frying fish is a quick and easy method, and fish are lower in fat than if fried in a skille or in deep fat.
5. Low to moderate heat is recommended for fish.	5. If cooked at a high temperature, the protein of fish becomes toug
6. Cook fish a short time to avoid overcooking, and cook only until the flesh flakes and separates easily from the bone.	6. The connective tissue in fish, largely collagen, softens readi during cooking. Fish lose their shape if overcooked and become dry and tasteless.
7. To bake fish, salt them and dip in melted fat and lemon juice; top with melted fat. Mayonnaise may be brushed on fish before broiling or baking.	7. To add fat and flavor to fish, fats and tart sauces are used in preparing and serving.

Moist Heat Method

8. Fish cooked by moist heat are often served plain, in salads, or with a sauce in casseroles.

9. To cook in water, place fish in a wire basket or tie with cheesecloth; simmer 10 min.

10. To steam, place fish on greased steamer pan over boiling water for 10 minutes; or season and wrap in aluminum foil and bake at 450 degrees.

11. Chowder is another moist heat method to cook fish in which vegetables are added, with the liquid being water, milk, tomato juice or a combination.

12. Shellfish are cooked at a low temperature for a short time.

12. To avoid toughening the protein shellfish are cooked for a short time at a low temperature

13. Accompaniments for fish are often tart in flavor and contrasting in color.

13. To bring out the delicate flavor and to add eye appeal, colorful tart sauces and garnishes are served with fish.

Some garnishes for fish include:

Beets
Carrot sticks
Celery
Cranberry sauce
Cucumbers
Hard-cooked eggs
Green peppers
Lemon
Paprika
Parsley
Pickles
Radishes
Tomatoes
Watercress

Frozen Fish

14. Frozen fish may be completely thawed before cooking if they are to be breaded or stuffed. Fish may be thawed at refrigerator temperature. Whole or drawn fish may be thawed quickly by immersion in cold running water.

15. Fillets, steaks, and dressed whole frozen fish may be cooked frozen if additional cooking time is allowed.

16. Do not thaw fish at room temperature.

16. If fish are thawed at room temperature, there is a large amount of drip.

Care of Fish

17. Fish must be handled carefully. Two days is the maximum time to hold fresh fish which are cooled and stored. Frozen fish must be kept below zero until ready for use.

17. Seafood deteriorates more rapidly than meat because of its higher moisture content and becuase the enzymes are more active at cold temperatures A sharp ammonia odor indicates deterioration.

18. Fish turn rancid quickly.

18. Because the fat in fish is polyunsaturated, it becomes rancid quickly.

From: Food Preparation Study Course, Iowa State University Press, 1971.

SCORECARD FOR FISH COOKERY

Variety of Fish	Method of Preparation	Appearance	Texture and Tenderness	Juiciness	Flavor
	Bake				
	Broil				
	Panfry				
	Deep-fat Fry				
	Poach				

CHARACTERISTICS OF HIGH QUALITY COOKED FISH

Appearance: Typical for method of cookery; boiled and poached products will not have a browned surface; surface of fish cooked by broiling, baking, or frying will generally have a golden brown surface.

Texture: Fish easily separates into flakes.

Juiciness: Flakes of fish will appear moist.

Tenderness: Some resistance to chewing, but sample should be easily masticated.

Flavor: Typical of variety of fish or seafood but not a distinct fish flavor or aroma.

Select and record the word(s) which best describe them. Evaluate against characteristics of high quality cooked fish using a 5 point scale--1=least desirable, 5=most desirable.

5:2

Lesson 6: Preparation of
Meat Salads and Variety Meats

Module II: Meats and More

I. Instructor preparation for class activities

A. Assemble pictures of meat salads and variety meats to use in class discussion of a high quality product

B. Market order
See recipes for class preparation

C. Duplicate sufficient copies of handouts
1. Scorecard for Main Dish Salads
2. Variety Meats
3. Timetable for Cooking Variety Meats
4. Recipes: Liver Loaf and Liver and Onions
5. Scorecard for Liver
6. Evaluation of Short Course

Lesson 6: Preparation of Meat Salads and Variety Meats

Module II: Meats and More

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Types	
A. Include: 1. Meat 2. Fish 3. Eggs 4. Cheese	
B. May be varied by use of gelatin	
C. Served with a variety of dressings	
D. May have ingredients ground instead of chopped and be used as sandwich filling.	
II. Nutritional contribution	
A. Protein content--Use of foods high in Vitamin B Complex 1. Eggs 2. Cheese 3. Meat 4. Fish	
B. Will increase minerals, vitamins and bulk due to use of vegetables	
C. Salad dressing adds calories	
D. Increases attractiveness and variety of meals	
III. Parts	Show examples of these parts and elaborate on their importance
A. Underliner	
B. Body	
C. Dressing	
D. Garnish	

FOOD SERVICE EMPL[illegible]E SHORT COURSE

Lesson 6: Preparation of Meat Salads and Variety Meats

Module II: Meats and More

LESSON CONTENT

IV. Essential elements

- A. Greens
  1. Clean
  2. Cool
  3. Tasty
  4. Crisp
  5. Bite-sized pieces
- B. Vegetables
  1. Drained
  2. Proper temperature
- C. Protein item
  1. Cold
  2. Dry
- D. Dressing
  1. Correct
  2. Properly seasoned
- E. Served at proper temperature
- F. Appropriate garnish

V. Showing of film--"A Cool Head for Salads"
Discussion of important points in film

VI. Salad preparation

- A. Chicken salad
  1. Chicken
  2. Green grapes
  3. Pineapple
  4. Almonds

CLASS ACTIVITY AND EVALUATION

Class discussion: Compare a list of characteristics of a high quality meat salad. Record these on the bottom of Handout 1: Scorecard for Meat Salads

Film: FS-106--"A Cool Head for Salads"--10 minutes, National Educational Media, Inc., 15760 Ventura Boulevard, Encino, California 91436 (213)-990-2125

Select recipes from Luncheon Salads and Sandwiches Section: Food for Fifty
Prepare meat salads

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
B. Beef salad 1. Diced beef 2. Celery 3. Peas 4. Hard-cooked eggs 5. Chopped olives	
C. Ham salad 1. Diced ham 2. Celery 3. Pickles 4. Hard-cooked eggs 5. Pimento 6. Mayonnaise	
D. Seafood salad 1. Tuna or salmon 2. Diced celery 3. Hard-cooked eggs 4. Diced cucumber 5. Chopped sweet pickle	
VII. Proper tools should be used to mix meat salads. Because bare hands may be a source of infection that may cause food poisoning, they should not be used in the mixing. Discuss the precautions in making chicken salad.	
VIII. Evaluation of salads	Handout 1: Scorecard for Main Dish Salads
IX. Liver A. Offers variety to menu and nutritional contribution in the diet B. Purchasable forms 1. Whole and Frozen--Slices easily if only partially thawed External attachments and large blood vessels are more easily removed	Handout 2: Variety Meats Handout 3: Timetable for Cooking Variety Meats Compare nutritional contribution of liver with other meat Class discussion of general acceptance of variety meats among clients

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
2. Sliced and Frozen--From 7-12 pounds beef liver or 2-4 pounds pork liver Slices should be trimmed free of all external attachments, ragged edges and large blood vessels	
3. Slices should be uniform--3/8 inch-½ inch thick	
4. Sliced liver layer packed, with each layer separated with moisture resistant paper	
5. Outer skin (thin membrane) from each slice should be removed before slicing	
C. Safety--Sanitation	
1. Highly perishable	
2. Purchase fresh frozen and used immediately after purchasing	
3. Store only one day in refrigerator if unable to use at once	
D. Preparation techniques--Cook at low temperature a short time Cook to well done stage	
1. Dry heat--plain or breaded	
a. Broil 5-8 minutes (until liver loses color) Dip slices of liver into melted margarine Place slices on cold broiler rack; Turn broiler on and cook 3 minutes on each side (2-4 inches from the heat)	Broil slices of liver and bacon strips in hot broiler
b. Pan frying Brown meat on both sides in small amount of fat Season with salt and pepper--DO NOT COVER Cook at moderate temperature until done (5 minutes) Remove from pan and serve at once	Pan fry liver with bacon, page 308: Food for Fifty
c. Bake	Prepare Liver Loaf, Oklahoma State Department of Health or Liver and Onions, Oklahoma State Department of Health
Test for doneness: Remove from heat when beads of moisture form on top of liver or when no blood appears if liver is punctured with a fork. Do not overcook. A total of 5 minutes cooking time may be enough. Liver should be cooked only long enough to bring about a color change in the interior	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
2. Moist heat--soaking liver in milk before cooking improves the flavor Braise--Brown meat in fat in heavy skillet, season with salt and pepper Add small amount liquid and cover tightly Cook low temperature until tender	Braised Liver, pages 308 or 256: Food for Fifty with Spanish Sauce, Page 466: Food for Fifty
E. Ways to garnish liver for eye-appeal and acceptance 1. Onions 2. Sauces 3. Vegetables	Class discussion: Compile a list of characteristics of high quality liver preparation. Record these on bottom of Handout 5: Scorecard for Liver
F. Evaluation of various methods of liver preparation	Handout 5: Scorecard for Liver Class discussion of principles of meat cookery learned in this class and being applied on the job
X. Evaluation of short course	Handout 6: Evaluation of Short Course

SCORECARD FOR MAIN DISH SALADS

SALAD	APPROPRIATE UNDERLINER	FLAVOR & AROMA	COLOR AND APPEARANCE	DRESSING	GARNISH
Chicken					
Beef					
Ham					
Seafood					

Scoring: 5 - 4 - 3 - 2 - 1 (High 5, Low 1)

Characteristics of a high quality meat salad:
(To be compiled by class and written here):

VARIETY MEATS

Variety meats include the internal organs such as heart, kidney, liver, brains, tripe (stomach of cattle), and sweet breads (thymus glands). Chitterlings, the small intestines of young pigs, are sometimes available. In some regions, the testicles of young lambs or calves may be eaten. Tongue also is considered a variety meat. A great delicacy of the Near East is the eye of the young roasted goat. It is always saved for the guest at the feast!

Variety meats are important in the diet because many of them are high in nutrients. But why do some population groups who do not realize their nutritive value, consider them to be such delicacies?

They learn to like them and prize them because there is such limited availability of variety meats.

*

Kidneys from young animals may be broiled or pan fried (Table 8.5). Heart and kidney from older animals require moist heat cookery methods, however, because they are less tender cuts of meat. If heart is partially cooked by moist heat, it can be stuffed and then baked to complete its preparation. Tongue is often cured and smoked, but regardless of its treatment prior to purchase, it needs to be prepared by moist heat cookery. Liver from young animals becomes more acceptable when it is braised to aid in tenderizing it.

Would you say that the cooking of variety meats is based on the amount of connective tissue in the item?

Yes. This is generally true.

Some variety meats have strong flavors which may be subdued with special treatment for wider appeal. Kidneys may be partially cooked in water which is discarded and then replaced with fresh water. This procedure minimizes the strong flavor of the kidney. Occasionally, liver and kidneys from young animals may be soaked in milk before they are sautéed or broiled to reduce their flavor a bit. Another technique to reduce the flavor of variety meats is to soak them in salted water or vinegar prior to cooking in fresh water.

Special cooking methods for variety meats are designed to reduce ***cooking time/flavor.***

Flavor.

*

Blanching is a process used to treat some variety meats preliminary to their actual final preparation. For instance, sliced beef liver may be briefly immersed in boiling water and the stringy, connective tissue removed. Sweet breads and brains may be briefly heated in water and vinegar to alter the flavor and to bleach the white variety meats before they are freed of their membranes. Other meats may be dipped in boiling water to give them more firmness before they are cooked. Thus, blanching is really a means of pretreating meats to prepare them for their final cooking method. The meats are partially cooked or parboiled by this process.

When meats are blanched they are fully cooked/parboiled.

Parboiled.

Reproduced from: Kotschevar, Lendal H. and McWilliams, Margaret, UNDERSTANDING FOOD, John Wiley and Sons, Inc., 1969, pages 252 and 254.

Reproduced from: Kotschevar, Lendal H. and McWilliams, Margaret, UNDERSTANDING FOOD, John Wiley and Sons, Inc., 1969, page 253

Table 8.5. Timetable for Cooking Variety Meats*

	Broiled	Braised†		Cooked in Liquid	
Type	Minutes	Minutes	Hours	Hours	Minutes
LIVER:					
Beef:					
3-4 lb piece			2–2½		
Sliced		20–25			
Veal (calf):					
Sliced	8–10				
Pork:					
Whole (3–3½ lb)			1½–2		
Sliced		20–25			
Lamb:					
Sliced	8–10				
KIDNEY:					
Beef				1–1½	
Veal (calf)	10–12			¾–1	
Pork	10–12			¾–1	
Lamb	10–12			¾–1	
HEART:					
Beef:					
Whole			3–4	3–4	
Sliced			1½–2		
Veal (calf):					
Whole			2½–3	2½–3	
Pork			2½–3	2½–3	
Lamb			2½–3	2½–3	
TONGUE:					
Beef				3–4	
Veal (calf)				2–3	
Pork } Usually sold					
Lamb } ready-to-serve					
TRIPE:					
Beef	10–15‡			1–1½	
SWEETBREADS:					
Beef	10–15‡	20–25			15–20
Veal (calf)	10–15‡	20–25			15–20
Lamb	10–15‡	20–25			15–20
BRAINS:					
Beef	10–15‡	20–25			15–20
Veal (calf)	10–15‡	20–25			15–20
Pork	10–15‡	20–25			15–20
Lamb	10–15‡	20–25			15–20

*By permission of the National Live Stock and Meat Board.

†On top of range or in a 300°F oven.

‡Time required after precooking in water.

LIVER LOAF

Ingredients	25 Servings		50 Servings		100 Servings	
	Wt. or Amt.	Measure	Wt. or Amt.	Measure	Wt. or Amt.	Measure
Liver, ground	4 lbs.	2 qts.	8 lbs.	4 qts.	16 lbs.	8 qts.
Parsley (optional)		1½ tbsp.		3 tbsp.		6 tbsp.
Onion		1½ tbsp.		3 tbsp.		6 tbsp.
Bread Crumbs	7 oz.	2 cups	14 oz.	1 qt.	1 lb. 12 oz.	2 qts.
Eggs	8 oz.	1 cup (4 eggs)	1 lb.	2 cups (8 eggs)	2 lbs.	1 qt. (16 egg
Stock (broth)	8 oz.	1 cup	1 lb.	2 cups	2 lbs.	1 qt.
Milk	1 lb.	2 cups	2 lbs.	1 qt.	4 lbs.	2 qt
Shortening	2 oz.	1/4 cup	4 oz.	1/2 cup	8 oz.	1 cup
Salt		2 tsp.		4½ tsp.		3 tbsp.

Procedure:
1. Finely grind liver, parsley and onions.
2. Add bread crumbs moistened in beaten eggs combined with liquid. Add melted fat and seasonings.
3. Blend mixture well.
4. Place in greased baking pans.
5. Bake in pan of hot water for 1 hour at 375° F.

Oklahoma State Dept. of Health
Nursing Home Project 9/63

LIVER AND ONIONS

Ingredients	25 Servings		50 Servings		100 Servings	
	Wt. or Amt.	Measure	Wt. or Amt.	Measure	Wt. or Amt.	Measure
Liver, sliced	4 lbs.		8 lbs.		16 lbs.	
Flour		3/4 cup		1½ cups		3 cups
Salt		3½ tsp.		2½ tbsp.		5 tbsp.
Pepper		3/4 tsp.		1½ tsp.		3 tsp.
Hot fat	5 oz.	½ cup + 2 tbsp	10 oz.	1¼ cups	1 lb. + 4 oz.	2½ cups
Onions, sliced	1 lb. + 8 oz.		3 lbs.		6 lbs.	
Water		2-1/3 c.		1 qt. + 3/4 c.		2 qt. + 1½ c.

Procedure:
1. Dredge sliced liver with a mixture of flour, salt and pepper.
2. Brown liver in hot fat. Place in roaster, cover with onions, water.
3. Cook until tender, approximately 1½ hours at 350°.

Note: If onion gravy is desired, pour off liquid and use in making gravy.

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Nursing Home Project 9/63

SCORECARD FOR LIVER

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability

Characteristics of high quality liver:
(To be compiled by class and written here)

This is what I learned at this workshop:

This is how I'll use what I learned on my job:

Next Time, I hope you will:

(over for more space)

KANSAS DEPARTMENT OF VOCATIONAL EDUCATION

FOOD SERVICE EMPLOYEE SHORT COURSE

MODULE III: VEGETABLES AND SALADS WITH PIZAZZ

Course length--18 hours: 3 hours per session for 6 weeks

Starting Date--

Participants--Food service employees from schools, nursing homes, hospitals and other institutions will be invited to attend. Some experience in quantity food production is desirable.

Learning Strategy--Presentation of the course will be by lecture, demonstrations, actual "hands-on" class activities, and audio-visual materials. Handouts will be distributed at most sessions.

Textbook--*Food for Fifty*, 6th ed.: West, Bessie Brooks; Shugart, Grace Severance; Wilson, Maxine Fay; John Wiley & Sons, 1979.

OBJECTIVES: To demonstrate proper techniques in quantity preparation of salads and vegetables including proper handling, storage and preparation of ingredients to retain color, flavor, texture, nutrients and "eye appeal". This will include using principles of sanitation, safety, and work simplification and proper use of large and hand equipment, standardized recipes and portion control.

COURSE OUTLINE:

Lesson one: Orientation & Cooking Methods
- Introduction to course and class members
- Variety of vegetables available
- Basic Four Food Groups slides
- Cooking methods used to prepare vegetables
- Standardized recipes
- Experiments in cooking time and use of acid and alkali on cooking vegetables

Lesson two: Vegetable Cookery
- Microwave and stir frying methods
- Demonstration of use of steamer
- Preparation of one cooked vegetable and one potato dish

Developed cooperatively by Occupational Home Economics, Kansas Department of Vocational Education, Wichita Area Vocational-Technical School, and Members of the Kansas Dietetic Association. An Equal Employment/ Educational Agency.

Lesson three: Molded Salads and Garnishes

Parts of a salad
Preparation of molded salads
Discussion of garnishes--Pizazz slides

Lesson four: Preparation of Fruit Salads

Demonstration and use of pastry tube
Preparation of fruit salads
Accident Prevention and Equipment Safety
Principles of work simplification

Lesson five: Preparation of Fresh Vegetable Salads

Preparation of fresh vegetable salads
Demonstration and use of hand and mechanical equipment for making salads
Experiment in care of lettuce
Preparation of salad dressings

Lesson six: Nutrition and Miscellaneous Salads

Good nutrition--function of vitamins and minerals
Preparation of miscellaneous salads (main dish salad)
Starch salads--macaroni salad, hot potato salad
Relish tray with herbed cottage cheese dip
Recipe exchange
Evaluation

EXPECTED OUTCOME: Participants will become more aware of their valuable and vital role on the health care team by providing nutritious and appealing meals to the residents/patients in their facilities as an aid to their well-being.

LESSON 1

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:

To demonstrate the effect of cooking time, acid, and alkali on various cooked vegetables and to discuss the preparation of vegetables and their contribution to the diet.

OBJECTIVES:

The participant will:

1. Understand purpose of course.
2. Discuss contributions of vegetables to the diet.
3. List at least 5 rules for vegetable cookery.
4. Describe at least 4 methods of cooking vegetables.
5. Describe at least 5 advantages of using standardized recipes.
6. Demonstrate the effect of cooking time, acid and alkali on various cooked vegetables.

SUPPLIES NEEDED:

Filmstrip projector and screen
Filmstrip "Food for Life: Vegetable and Fruit Group"
Registration forms
Name tags
Folders with Handouts
2-3 cans of green beans
Strainer
Measuring cups and spoons
Pans
Cream of tartar
Soda
Vinegar
Plastic glasses
White plates
Spoons
½ medium head red cabbage
8 medium carrots
1 bunch broccoli
8 medium onions
2-10 oz. packages fresh spinach

HANDOUTS:

1:1 Course Outline
1:2 Vegetable Cookery
1:3 Determining Quality
1:4 Methods of Cooking Vegetables
1:5 Recipe Form
1:6 Vegetables--Effect Of Cooking Treatment
1:7 Observations on Vegetables (Scorecard)
1:8 Crossword Puzzle: Vegetables
Commercial Recipes and Folders

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1

Module III: Vegetables and Salads with Pizazz

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. General Orientation	
A. Presentation of name tags and get-acquainted activity 1. Introduce faculty and students	Play game for introducing participants to each other: First person in group introduces him/herself by telling name, place of work, what he/she does at work and at least one interesting thing about him/herself. The second person introduces him/herself and then repeats first person's name and his/her name. The third person introduces him/herself and then repeats first two persons' names and his/her own. This continues until all have been introduced.
2. Complete enrollment procedure	
B. Orientation to the course 1. Purpose of the course--Introduction and overview 2. Handout 1:1 Outline of Course 3. Learn by doing, preparation and display 4. Learn some scientific principles of food preparation 5. Evaluate finished products using score cards	Ask students what they want to learn about vegetables, salads and garnishes. As much as possible, incorporate those requests into this module.
6. Importance of clean-up, sanitation and safety practices	Explain that other employees will be using this kitchen and expect it to be clean and orderly.
7. Meeting place and times 8. Certificate of completion--grade if given	
C. Orientation to facility 1. Building rules and policies 2. Location of restrooms and smoking areas	
D. Student handbook 1. Dress code, personal conduct, food handling, sanitation and safety checklists	Review handouts in student handbook
2. Procedure for tasting food--tasting spoon 3. Use of textbook and handouts	
4. Organization of class into teams	Assign participants into teams, according to number in class and class activities. Use color-coded folders or colored name tags. Review "Team Duties."

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
E. Tour kitchen and work area	
1. Emphasize handwashing rules and locate handwashing sinks	Participants demonstrate proper handwashing procedures.
2. Review 3-sink method of ware-washing in student handbook	Participants demonstrate filling of sinks, measuring sanitizer, etc.
3. Discuss sanitary procedures for washing and storing equipment and utensils a. Instructor will establish policy for returning utensils and ingredients to storage areas	Participants demonstrate method of cleaning and sanitizing work surfaces, washing and storing utensils.
4. Note location and use of range top, ovens, steam jacketed kettle, steamer, etc.	
II. Vegetables--Using Handout 1:2, discuss the following:	Filmstrip--"Food for Life: Vegetable and Fruit Group"
A. Contributions of vegetables to the diet	
B. Why do we cook vegetables?	
C. Part of plant eaten as a vegetable	
D. Purchasing of vegetables	
1. Can cutting	Demonstrate can cutting using 2-3 brands of canned green beans. Use Handout 1:3 to record results and determine best buy.
2. Amounts to purchase	Class discussion of amount needed to purchase for 50 servings of vegetables in Food for Fifty, pp. 18-21, 65-67.
E. Storage of vegetables	
F. Categories of vegetables by color	
G. Conserving flavor, texture and nutrients in cooking	
H. General rules for vegetable cookery	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
III. Methods of cooking vegetables	
A. Discuss Handout 1:4--Stress preparation in small batches on a staggered schedule	
B. Discuss Food for Fifty, pp. 496-503	
IV. Seasoning and serving vegetables	Class discussion of ways participants have used vegetables in their facilities.
A. Discuss Handout 1:2	
B. Examine recipes in Food for Fifty, pp. 532-537	
V. Advantages of Standardized Recipes	
A. Increased customer satisfaction	
B. Consistent quality level	
C. Predictable yields	
D. Known recipe costs and portion costs	
E. Predictable amounts to purchase	
F. Reduced over- or under-production	
G. Constant nutritional values	
VI. Discuss recipe exchange for last lesson in this series--bring a favorite recipe for at least one cooked vegetable and one salad to exchange. Should be typed or in legible pen on Handout 1:5 and adjusted for 50 servings.	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VII. Group experiments on effect of cooking time, acid and alkali on various cooked vegetables. Discuss results.	Divide class into 5 groups of 3 participants each. Assign each group one of the following: Group 1--red cabbage 2--carrots 3--broccoli 4--onions 5--spinach Follow procedures on Handout 1:6. Group evaluation using observation sheet.
VIII. Plan foods to be prepared next week. Prepare market order.	Each group select a recipe from Food for Fifty for one cooked vegetable and one potato dish that they have not prepared before. (pp. 504-530). Plan list of supplies needed for next week.

VEGETABLE COOKERY

I. Contributions of vegetables to the diet

   A. Vitamins A, B and C and many minerals

   B. Cellulose or fiber

   C. Color, interest and unusual texture to menu

II. Why do we cook vegetables?

   A. To alter the flavor

   B. To soften the product

   C. To improve their texture

   D. To increase the product's digestibility

   E. To make them more appetizing

   F. To add variety

III. Part of plant eaten as a vegetable

   A. Leaves--Brussels sprouts, cabbage, lettuce, parsley, spinach, greens (mustard, spinach, etc.). Mostly water, but high vitamin and mineral content.

   B. Seeds--beans, peas, corn--contain protein, sugar and starch.

   C. Roots--beets, carrots, sweet potatoes, radishes, turnips--contain starch and sugar.

   D. Tubers--white potatoes--contain starch and sugar.

   E. Bulbs--garlic, onions--contain starch and sugar.

   F. Flowers--broccoli, cauliflower--contain starch and vitamins.

   G. Fruits--cucumbers, eggplant, okra, peppers, pumpkin, squash, tomatoes--contain starch and vitamins and minerals.

   H. Stems and shoots--asparagus, celery, chives--mainly cellulose and water.

IV. Purchasing vegetables--forms available

A. Fresh vegetables
1. Buy in season for best nutrition and flavor
2. Labor cost may be high

B. Frozen vegetables
1. Save preparation time and labor--about 50% cooked
2. Available year around
3. Yield standard finished product
4. Purchases may depend on vendor deliveries and freezer space available

C. Canned vegetables
1. Most convenient and longer storage life
2. Least attractive and least nutritive
3. Less preparation time as only need to be reheated

D. Dried or dehydrated
1. Most of water has been removed
2. Convenient to store and long shelf life

V. Storage of vegetables

A. Canned vegetables and root vegetables stored in cool dry room at 50-70° F. with good ventilation

B. Fresh vegetables keep best at 35-45° F. for 2-5 days.

C. Frozen vegetables should be kept below 0° F.

VI. Categories of vegetables by color

A. Red: beets, red cabbage, red beans
1. Cooking in acid intensifies red color. Add small amount of vinegar, wine or lemon juice to maintain color
2. Some hard water or alkaline turns vegetables purple, blue or green
3. Cook in a covered pan to keep acid from evaporating
4. Cook beets unpeeled to keep red pigment in vegetable

B. Green: green beans, lima beans, broccoli, asparagus, peas, artichokes, okra, brussels sprouts, spinach, parsley, green peppers, greens (mustard, turnip, etc.)
1. Keep colors best in slightly alkaline solution
2. Cook uncovered to allow acids to evaporate
3. Do not add soda to make liquid alkaline as it destroys some nutrients and makes vegetables mushy and sometimes adds a bitter taste
4. Overcooking turns green vegetables from bright to olive green

C. Yellow: carrots, rutabaga, winter squash, yams, sweet potatoes, corn, tomatoes
   1. Not affected by either acid or alkaline solutions
   2. Color may be lost from overcooking

D. White: potatoes, green cabbage, turnips, celery, summer squash, cauliflower, onions, mushrooms, cucumbers, zucchini
   1. Turn gray when overcooked and develop an undesirable taste
   2. May turn gray or yellow in alkaline solution
   3. Small amount of lemon juice or cover when cooking will add acid but too much makes vegetables tough

VII. Conserving flavor, texture and nutrients in cooking

A. Flavor
   1. Overcooking loses flavor into air or liquid
   2. Members of cabbage family (cabbage, turnips, cauliflower, brussels sprouts, broccoli) develop a strong acrid taste and unpleasant smell if overcooked. Cook quickly with the lid off to allow strong flavors to evaporate.

B. Texture
   1. Good texture is firm to the bite yet tender
   2. Cook vegetables as close to serving time as possible and in as small quantities as possible

C. Nutrients
   1. Some are destroyed by alkaline solutions, heat (either high heat or prolonged cooking), evaporate easily or are water soluble
   2. Do not overcook. This cuts all kinds of nutrient loss
   3. Cook as close to serving time as possible. Prevent loss through exposure to air
   4. Use no more liquid than necessary
   5. In fresh vegetables, peel away as little flesh as possible, as many nutrients are near the skin

   6. The larger the cut surface, the greater the nutrient loss
   7. When nutrient conflicts with flavor, appearance or production needs, the choice will be made according to circumstances and clientele being served.

GENERAL RULES FOR VEGETABLE COOKERY

1. Clean raw vegetables thoroughly before cooking.
2. Cut vegetables evenly for even cooking.
3. Use as little liquid as possible. In boiling liquid should be enough so that all pieces cook evenly, but no more.
4. Avoid acid solutions for green vegetables and alkaline solutions for red ones.
5. Cook vegetables in as small amounts as possible.
6. Cook as close to serving time as possible.
7. Do not overcook.

SOME HERBS FOR VEGETABLES

BASIL--mixed vegetables, lima beans
BAY LEAF--stewed tomatoes
CARAWAY SEEDS--red and green cabbage, sauerkraut
CELERY SEED--potato salad, coleslaw
CHIVES--corn, potatoes, tomatoes, waxed beans
CLOVES--stud an onion with whole cloves. Cook with red cabbage
CURRY--rice, green beans, curried fruit
DILL WEED OR SEED--potatoes, peas and carrots, green beans
MACE OR NUTMEG--spinach
MINT--peas
MONOSODIUM GLUTAMATE OR "ACCENT"--brings out natural flavors
OREGANO- green beans with tomatoes and onion
ROSEMARY--potatoes, cauliflower, turnips (takes canned taste out of canned vegetables)
WHITE PEPPER--does not discolor vegetables
SAGE--lima beans, eggplant
SESAME SEED--toasted, sprinkle on buttered vegetables
TARRAGON--carrots
THYME--brightens flavor of vegetables

DETERMINING QUALITY

	#1	#2	#3
Label			
Net weight			
Drained weight			
Cost per can			
Number of ½ C. servings per can			
Cost per serving			
Drained weight - 20 points			
Wholeness - 20 **points**			
Color - 30 **points**			
Absence of defects - 30 points			
Total Score			
Comments:			

METHODS OF COOKING VEGETABLES

I. Boiling

A. Cooking a vegetable submerged in a liquid at or just below the boiling point is the most universal method of vegetable cookery.

B. Cover the pot or not according to color or strong taste.

C. Put vegetable in the pot with hot liquid just to cover, add salt, herbs or spices to flavor and boil it gently to correct doneness, being careful not to overcook.

D. Drain vegetable as soon as cooking is complete or it will continue to cook.

E. Suitable vegetables for boiling are: artichokes, asparagus, beets, broccoli, brussels sprouts, cabbage, carrots, cauliflower, corn, green beans, onions, peas, potatoes, rutabagas, summer squash, tomatoes, turnips and zucchini.

F. Dried vegetables should be soaked overnight and simmered, not boiled, until they are done throughout, but firm enough to hold their shape.

II. Steaming

A. Place cleaned and prepared vegetables into steamer cabinets that cook them at pressures of 5 to 15 psi (pounds per square inch).

B. Follow timing charts to avoid overcooking. See time table with equipment or chart in Food for Fifty, pp. 501-503.

C. Suitable vegetables for steaming are: artichokes, asparagus, broccoli, brussels sprcuts, cabbage, carrots, cauliflower, green beans, lima beans, onions, peas, potatoes, rutabagas, summer squash, tomatoes, turnips and zucchini.

III. Braising

A. Cooking vegetables slowly, covered, in a small amount of liquid. Retains juices. Often done in oven.

B. Suitable vegetables are: leeks, mushrooms, potatoes, summer squash and zucchini.

IV. Deep frying

A. Cut even pieces for cooking.

B. Partial-cook hard vegetables.

C. Bread carefully for a complete, even coat with no loose crumbs. Season before breading. Do not season uncoated foods.

D. Be sure the fat is at the right temperature (325-350° F.) before immersing the food. If it is too high, the food may be overbrowned on the outside and undercooked on the inside.

E. Do not overload the fryer. Fill baskets only one-half to two-thirds full. Partially filled baskets allow you to shake the food occasionally to keep the pieces from sticking together.

F. When food is golden brown, lift the basket out of fat and drain a minute or so over the kettle. Drain further on absorbent material if necessary.

G. Suitable vegetables are: cauliflower, eggplant, okra, onions, parsley and potatoes.

V. Pan-frying

A. Brown vegetables in butter or bacon drippings in a pan or skillet.

B. Suitable vegetables are: potatoes, onions and mushrooms.

VI. Baking

A. Baking in oven retains more vitamins and minerals than many other methods.

B. Suitable vegetables are: squash, potatoes, eggplant and tomatoes.

VII. Broiling

A. Baked in oven first, with a minute or two under broiler at end to glaze them.

B. Suitable vegetables are: eggplant, mushrooms, onions and tomatoes.

VIII. Sauteing

A. Cook vegetable to three-fourths doneness, then finish cooking in a little hot fat in a pan.

B. Suitable vegetables are: asparagus, broccoli, carrots, cauliflower, green beans, mushrooms, onions, potatoes, peas, brussels sprouts and some kinds of squash.

IX. Stir frying

A. Rapidly toss or stir thinly cut vegetables in a very hot wok or electric skillet using a small amount of oil 2 or 3 minutes.

B. Suitable vegetables are: most ordinary fresh vegetables, including oriental vegetables and bean sprouts.

X. Microwave

A. Cook in batches according to manufacturer's directions as needed.

B. Suitable for high moisture vegetables and heating small quantities of precooked foods.

RECIPE:

YIELD:

TIME:

NUMBER OF PORTIONS: 1:5

TEMPERATURE:

SIZE OF PORTION:

INGREDIENTS	AMOUNT			METHOD

VEGETABLES--EFFECT OF COOKING TREATMENT

Group 1--Red cabbage
Group 2--Carrots
Group 3--Broccoli
Group 4--Onions
Group 5--Spinach

PROCEDURE

1. Put 1 quart cold water in a 2 quart saucepan and bring to a boil; start 1 pan for each treatment.
2. Clean vegetables.
3. Divide carrots, red cabbage, onions and spinach into four equal portions. Divide the broccoli into five equal portions.
4. For each treatment listed below, cook one portion of vegetable; add vegetables to boiling water.
5. It may be necessary to add more hot water if substantial amounts of water are lost by evaporation. Do not let the vegetable boil dry.
6. At the end of the cooking period, drain the vegetable by placing it in a strainer. Collect part of the cooking liquid in a glass. Put the cooked vegetable on a white plate for evaluation.
7. Evaluation and discussions should include both the cooked vegetable and the cooking liquid.
8. Record observations in the tables on the following pages.

COOKING TREATMENTS*

1. Boil for 15 minutes. Count time after water returns to a boil.
2. Boil for 30 minutes. Count time after water returns to a boil.
3. Add ½ teaspoon baking soda after adding the water. Boil for 15 minutes after water returns to a boil.
4. Add 1 teaspoon cream of tartar after adding the water. Boil for 15 minutes after water returns to a boil.
5. For the fifth sample of broccoli, place the lid on the saucepan after the water has been added: boil for 30 minutes after water returns to a boil.

*Cover saucepan for cooking carrots, use uncovered saucepan for all other samples

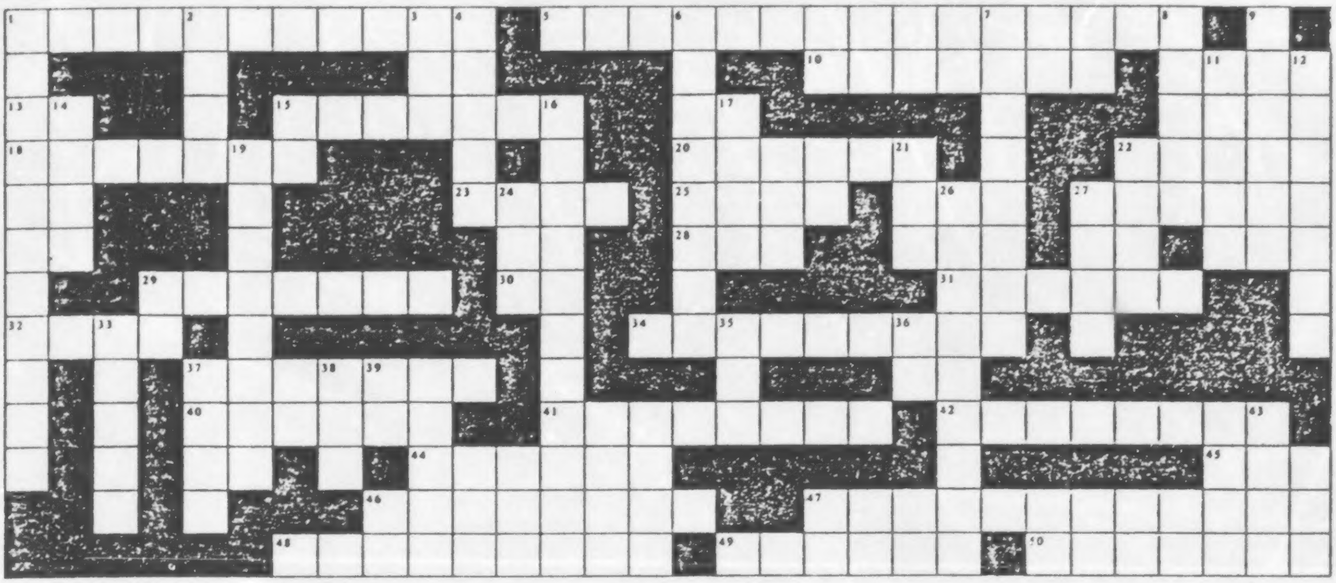
OBSERVATIONS ON VEGETABLES

Vegetable	Treatment Number	Color		Texture	Flavor
		Juice	Vegetable		
Red cabbage	(1) 15 minutes				
	(2) 30 minutes				
	(3) soda				
	(4) acid				
Onions	(1) 15 minutes				
	(2) 30 minutes				
	(3) soda				
	(4) acid				
Carrots	(1) 15 minutes				
	(2) 30 minutes				
	(3) soda				
	(4) acid				

OBSERVATIONS ON VEGETABLES

Vegetable	Treatment Number	Color		Texture	Flavor
		Juice	Vegetable		
Broccoli	(1) 15 minutes uncovered				
	(2) 30 minutes uncovered				
	(3) soda uncovered				
	(4) acid uncovered				
	(5) 30 minutes covered				
Spinach	(1) 15 minutes				
	(2) 30 minutes				
	(3) soda				
	(4) acid				

Crossword Puzzle: Vegetables



ACROSS

1. The green coloring substance of plants is ______.
5. This green leafy vegetable looks like small cabbages. (2 words)
10. This leafy green vegetable is used to make cole slaw.
13. The opposite of "down" is ______.
15. Artichoke, broccoli, and cauliflower are classified as ______.
18. Dried peas and beans are known as ______.
20. When you eat lettuce or cabbage you are eating the ______ of a plant.
23. When you eat asparagus or celery you are eating the ______ of a plant.
25. Most vegetables grow on ______.
28. A 227-g (8-oz) can will contain ______ cup.
29. Green bell is a popular variety of this vegetable, which is classified as a fruit.
30. The abbreviation of "pint" is ______.
31. This is a popular stem, often eaten raw as a snack.
32. This long green pod is classified as a fruit.
34. This light green stem vegetable is usually cooked before eating.
37. This elongated orange root vegetable is often eaten raw as a snack.
40. Popular varieties of this vegetable include Spanish, Bermuda, Globe yellow, and white.
41. This favorite vegetable is classified as a fruit; it is usually bright red, but may also be yellow.
42. This green vegetable is classified as a flower and is often served with a cheese sauce.
44. The most popular tuber is the ______.
45. Tubers and some root vegetables may be stored in a cool, dark, ______ place.
46. This is the yellow substance in some vegetables that your body converts into vitamin A.
47. Most fresh vegetables should be stored in a ______.
48. This is a flower-type vegetable; usually its petals are peeled off to be eaten.
49. This strongly flavored bulb vegetable often is used to season dips or sour cream.
50. The most frequently used method of cooking vegetables is ______.

DOWN:

1. This white vegetable is classified as a flower.
2. Canned vegetables may be stored at ______ temperature.
3. Most vegetables are ______ in calories.
4. This is a cylindrical shaped bulb, similar in flavor to an onion.
6. These small brown bulbs resemble onions.
7. This small, red and white root vegetable is usually eaten raw.
8. To preserve nutrients, most vegetables should be cooked in a ______ amount of water.
9. This vegetable has small bulbs, divided into sections called cloves, which are very strong in flavor.
11. Beans, peas, and corn are classified as ______.
12. This green leafy vegetable was made popular by Popeye the Sailor.
14. This green vegetable grows in pods and is classified as a seed.
16. ______ is an orange root vegetable, sometimes called a yam. (2 words)
17. Popular types of this vegetable, classified as a seed, include green and mature.
19. This large oval fruit-type vegetable is covered with a purple skin.
21. A large body of water is a ______.
22. The number of servings from the Vegetable-Fruit Group that you should have daily is ______.
24. The opposite of "bottom" is ______.
26. Classified as fruits, these green and white vegetables are often made into pickles.
27. A deep red, round root vegetable is the ______.
33. Parsnips, turnips, and rutabaga are all classified as ______.
34. Leafy green and deep yellow vegetables are excellent sources of vitamin ______.
35. Corn on the cob is usually cooked in a large ______ of boiling water.
36. ______ is the opposite of "stop."
37. This popular vegetable consists of yellow seeds that grow on cobs.
38. In a garden, most vegetables are planted in a ______.
39. Butter is a common seasoning to put ______ vegetables.
43. Leafy green vegetables are good sources of this mineral.

LESSON 2

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:

To be able to prepare cooked vegetables preserving color, form and quality and retaining as much nutritive value as possible.

OBJECTIVES:

The participant will:

1. Demonstrate the ability to operate a steamer.
2. Demonstrate the ability to prepare a cooked vegetable.
3. Demonstrate the ability to prepare a potato dish.
4. Be able to recognize a good quality vegetable and potato product using scorecard.

SUPPLIES NEEDED:

Ingredients for cooked vegetables and potatoes using student lists.
Brochures for steamers

HANDOUTS:

2:1 Steamers
2:2 Scorecard for Cooked Vegetables

Lesson 2

FOOD SERVICE EMPLOYEE SHORT COURSE

Module III: Vegetables and Salads with Pizazz

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Compartment Steamers A. Discuss Handout 2:1 B. Types of steamers available 1. High pressure - faster cooking time 2. Convection - can open door easier C. Display of brochures of steamers available 1. Market Forge 2. Cleveland 3. Hobart 4. Others	Demonstration of operation of steamer Emphasize release steam slowly and stand back to avoid burns
II. Preparation of cooked vegetables A. Discuss cooking times of vegetables FF pp. 501-503 B. Discuss seasoning and serving vegetables FF pp. 532-537	In small groups prepare: Assigned cooked vegetable Assigned potato dish
III. Discuss evaluation of cooked vegetable and potato dish. Emphasize "What is a good quality vegetable?"	Score cooked vegetables using scorecard Score potato dish using scorecard
IV. Plan for next session on molded salads	Choose a molded salad using FF pp. 415-422 Plan a list of supplies needed for next week for teacher Recipe exchange

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Des Moines, Iowa 50310

2:1

COMPARTMENT STEAMERS

A compartment steamer has sealed chambers that cook rapidly. Cool air is exhausted from the chambers as steam enters. They are made with 1, 2, or 3 chambers and are constructed with shelves available for 2, 4, or 6 standard-size steamtable pans 2½" deep. Pans that are 4 to 6 inches deep may be used if the shelves are removed.

Most steamers operate on 5-lb. to 6-lb. pressure because of the gaskets that seal the chambers. There are self-contained models generating their own steam, but most operate on remote steam supply.

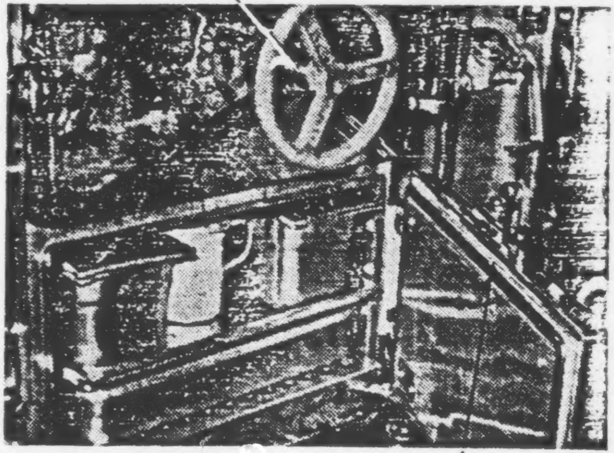
One model operates on 1-lb. steam pressure and other models operate safely on 15 lbs., which is maximum for low pressure steam. These latter models are very effective for heating or cooking frozen foods. Steamers have several key factors that are critical for its proper functioning.

TO FUNCTION PROPERLY

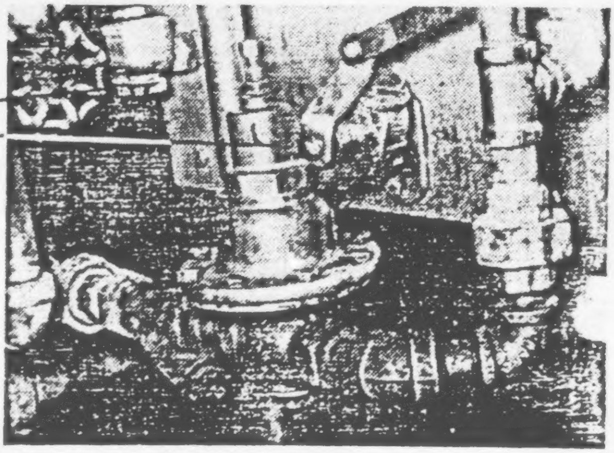
- Steam must be reduced to the correct pressure by steam trap.
- Thermal valve must be working. It expels cold air from chamber.
- No excessive condensation should be coming from the steam line.
- After food is put into cooker, pressure should not take more than 3 minutes to return to normal.

MALFUNCTIONS

- Steam traps are not of proper size, and they are not in working condition to provide the correct pressure of 5 to 6 lbs.
- Thermal valve is not working. Bellows may be ruptured and if so, a thermostatic cage-type element may be used. If this element is used, the seat of the old valve must be removed.
- Threads on hand wheel (used for tightening lid) get dry and stick. If so, use graphite grease.



- If steam is leaking past the door gasket, a new gasket may be needed.



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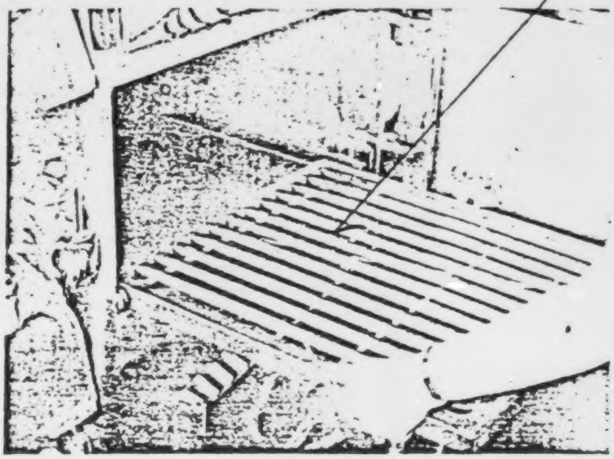
- Excess water should be expelled from the chamber. If there is excess water, a steam trap should be installed in the steam line coming into the pressure cooker, which will release the water.
- If more than 3 minutes is required for pressure to return to normal after food is put into a compartment, either the thermal valve is not expelling the cold air or not enough steam is getting through the reducer valve or the steam line is too small.

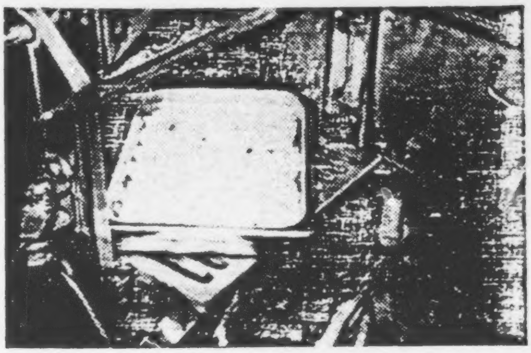
TO OPERATE A PRESSURE COOKER

- Close door and secure latch to hold door, then tighten wheel.
- Pull lever gradually to release steam into chamber. A spewing sound emits as cold air leaves chamber through the thermal valve.
- To open chamber, pull down the steam lever gradually to release steam. A rapid pull on lever may cause food to be blown from pan. Unscrew wheel and flip back latch to open door. Step back so escaping steam will not hit your face because severe burns may result.

TO CLEAN COOKER

- Remove shelving from chamber when cold.
- Wash chamber and shelving with a warm detergent solution.
- Replace shelving in chamber.
- Always leave compartment door ajar when not in use.
- Wash and dry its exterior.
- Clean daily.





Cooking cauliflower in pressure cooker.

SCORECARD FOR COOKED VEGETABLES

Score product as follows:

Very good	4
Good.	3
Fair.	2
Poor.	1

Exterior Appearance

Good Characteristics:	Poor Characteristics:
Regular, intact pieces	Irregular, broken pieces
Good color	Dull or off color
Cut edges remain distinct	Shriveled
Moist	Dry

Interior Appearance

Good Characteristics:	Poor Characteristics:
Tender, yet slightly firm to bite	Mushy
Slightly crisp	Hard, woody

Palatability

Good Characteristics:	Poor Characteristics
Good flavor	Strong flavor, burned
Well seasoned	Over or no seasoning
Hot	Semi-cool or cool
Attractive	Carelessly served

Vegetable	Exterior Appearance	Interior Appearance	Palatability

LESSON 3

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:

To be able to prepare molded salads that will add attractiveness and nutrition to the menu.

OBJECTIVES:

The participant will:

1. Prepare a good quality molded salad.
2. List the four basic parts of a salad.
3. List three characteristics of a good garnish.
4. Demonstrate ability to use a pastry tube.
5. Evaluate molded salad using scorecard.

SUPPLIES NEEDED:

Slide projector, screen and tape recorder
"Pizazz"
5 pastry tubes
Ingredients for salads using student lists

HANDOUTS:

3:1 Introduction to Salads
3:2 Preparing Molded Salads
3:3 Garnishes
3:4 Scorecard for Molded Gelatin Salads

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 3

Module III: Vegetables and Salads with Pizazz

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Introduction to Salads - Handout 3:1	
II. Molded gelatin salads	In small groups prepare a good quality gelatin salad using suggestions on Handout 3:1
A. Gelatin comes from the cartilage, bones and skins of animals	
B. Plain gelatin has little value as food	
C. Gelatin salads are an attractive means of adding fruits and vegetables to diet	
D. Gelatin salads may be prepared ahead of time	
E. Available in 2 forms: 1. Plain - must be softened in cold water before adding hot liquids 2. Flavored (such as Jello brand) - can be added immediately to a hot liquid	
F. Discuss Handout 3:1 - Preparing Molded Salads	
III. Garnishes	View slides "Pizazz" on garnishes Brainstorm various garnishes to use with salads using ideas on garnishes in FF pp. 590-591
A. Should be simple	
B. Add contrast in shape, color, crispness or flavor to the food it accompanies	
C. Should be edible	
D. Discuss Handout 3:2 - Garnishes	
IV. Demonstration of using pastry tube	Practice using pastry tubes
V. Discuss evaluation of molded salads using scorecard	Score molded salads using scorecard

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VI. Plan for next session on fruit salads A. Assign each group one can of fruit to prepare various salads: 1. Peach halves 2. Pear halves 3. Pineapple rings 4. Orange and grapefruit sections 5. Applesauce and apple rings	Plan list of supplies needed for next week for teacher Plan ideas for salads using ideas in FF pp. 402-404

INTRODUCTION TO SALADS

We will discuss mainly salads which are used as an accompaniment to the main course. Other salads include appetizers, main course salads and dessert salads.

Contribution of salads to the diet are:

1. Contribute many vitamins and minerals to the diet.
2. Raw salads supply fiber to the diet.
3. Salads provide interesting color and textures to the menu.
4. It is a way to add a variety of fruits and vegetables to the diet.

Some characteristics of a good salad include:

1. Fresh and well-shaped ingredients.
2. Variety of textures.
3. Cooked fruits and vegetables should be ripe but firm.
4. Compatible ingredients.
5. Garnish for eye appeal.
6. Good proportion among ingredients.
7. The salad dressing should be more tart than the salad.

Salads have four basic parts:

1. The base or underliner refers to the foundation of the salad. Some good underliners are leaf lettuce, romaine lettuce or bibb lettuce. The frilly edge should be placed at the "top" of the plate and should not extend over the edge.
2. The body refers to the main ingredients of the salad. The ingredients should be appropriate for the use of the salad. Any combination of crisp, flavorful ingredients may be used.
3. The garnish for a salad is anything used to make the salad more attractive. Garnishes give variety in form, color and texture. They need to be suited to the other ingredients and yet stand out also. They can be an ingredients already used in the salad or a different ingredient.
4. The dressing that accompanies the salad provides seasoning. It should enhance the flavor of the salad.

PREPARING MOLDED SALADS

1. Gelatin means the setting or stiffening of a gelatin solution. Gel formation does not occur at a fixed point, but is a gradual process.

2. Buy good quality gelatin. It will set at a higher temperature and form a firmer gel which stands up better for a longer time at room temperature than one of poor quality.

3. The way gelatin is prepared and chilled affects the final product. The following points may assure success:
    a. Soak plain gelatin and gelatin mixtures in a small amount of cold water. Soaking gelatin in cold water will cause it to swell (become hydrated). Even though directions on the packages of most gelatin mixtures omit the soaking in cold water, a better solution results from preliminary soaking in part of the total required cold liquid.
    b. Add only enough hot water to completely dissolve gelatin. A rubbery layer will be formed on the bottom of the product if the gelatin is not completely dissolved.
    c. Do not boil gelatin, as it will become tough.
    d. Add the remaining liquid in a cold state as it takes less time to cool the solution and volatile flavor substances will not be lost.
    e. It is recommended that the solution remain at a cool room temperature before putting into the refrigerator. It will hold up better when served if cooled at room temperature. If gelatin is cooled too quickly, the firmness of the gel may be weak.

4. When a gelatin solution is whipped, more gelatin is required to produce a firm sponge. Whipping increases the volume and decreases the concentration of gelatin mixtures.

5. Cook frozen or fresh pineapple before using in a gelatin salad. Uncooked pineapple contains a protein-digesting enzyme, bromelin, which destroys the gelling power of gelatin. Cooking destroys this enzyme.

6. When milk is used for the liquid in making gelatin, as in Spanish Cream, a firmer gel is produced.

7. Use the correct amount of sugar in gelatin mixtures. A medium amount of sugar increases the stiffness of the gel, but a large amount retards gel formation and weakens it.

8. If a sweetened flavored gelatin such as Jello is used:
    a. ½ fruit syrup sweetened and ½ water may be used.
    b. If all fruit juice is used from canned fruit, the amount of sweetened gelatin should be increased by ¼.

9. Add moderate amount of chopped vegetables or fruits to gelatin. Large amounts of chopped foods will cut and weaken the gel.

10. More gelatin is needed when acids such as lemon juice or tomato juice are included in the salad. Acid weakens gel structure.

11. Fruits and vegetable particles in gelatin salads should be fairly uniform in size and identifiable.

12. Prepare the gelatin and let it set until it is the consistency of unbeaten egg whites before adding other ingredients. If the gelatin mixture is slightly thickened, foods will mix evenly through the gelatin, rather than sink to the bottom or rise to the top.

13. Some fruits "layer" themselves in a gelatin; usually canned fruits sink, and fresh and frozen ones float. Perhaps the sugar used in canned fruits gives the added weight.

14. To mold large pieces of fruit in a definite pattern, arrange each layer of fruit in a gelatin that has been chilled to the consistency of unbeaten egg whites and allow it to set before adding the next layer. Each part of the molded salad will stay separated and be layered if the gelatin is allowed to partially set between the addition of layers of fruit.

15. Fruits and vegetables must be drained, and the liquid included in the total liquid to avoid a soft gelatin.

16. In large quantities, gelatin must be stirred longer than for household size recipes.

17. The larger the volume of gelatin, the longer it takes to set.

18. Freezing breaks the gelatin structure.

19. For quicker setting, chill fruits or vegetables to be used before combining with gelatin.

20. The proper size of pan should be used so that the product will be of desired thickness. If the salad is too thin, it is harder to serve, takes up more space in the refrigerator and is less attractive.

21. Gelatin products should be prepared the day before in order to give the product time to set.

22. Unmold salads neatly as follows:
    a. Rub salad oil or mayonnaise or spray a food release in the mold before pouring the gelatin mixture into the mold. The gelled mixture will slide out easily without dipping in water.
    OR
    b. Run a knife around the upper edge and quickly immerse the mold just to the top in lukewarm water. Shake the mold.

GARNISHES

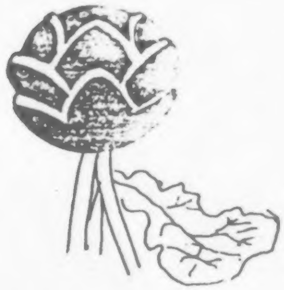
What makes the difference between plain food and something really special? It may be nothing more than a slice of lemon or a sprig of parsley, or perhaps a dash of nutmeg or cinnamon. The finishing touches placed on or around food are called garnishes. Garnishes add a touch of color or flavor to the food.

Some general suggestions for using garnishes are the following:

1. Use garnishes that can be eaten. However, little figures, flags or flowers may be used for special occasions.
2. A garnish should improve the appearance of the food with which it is served, but should not overpower it.
3. Balance the placement of garnishes on the platter or use the garnish in several spots. Odd numbers are usually more pleasing. For example, three lemon slices on a platter of fish are more interesting than four.
4. Experiment with garnishes, considering color, size, and texture. How would it look to use sliced beets on a plate of baked salmon? Or a maraschino cherry on a strawberry dessert? There should be a contrast between the garnish and the food.
5. Colorful, natural foods can be used to give very pleasing effects. Examples are paprika, pimento, lemon slices, fresh green onions and stuffed olives.
6. Avoid using artificial colors. Blue and purple are not considered very appetizing.
7. Use fresh garnishes of high quality. There is nothing attractive about wilted parsley or dried lemon wedges.
8. Avoid garnishes with liquid sauces that run into the foods they accompany.
9. Try to keep the temperature of the garnish near the temperature of the food, or "protect" the garnish to keep it at the correct temperature. For example, placing cranberry jelly on a candied apple ring or mint jelly on an orange slice keeps the jelly from melting on a hot plate.
10. Avoid toothpicks in garnishes unless they can be seen easily.
11. Garnishes can be prepared ahead of time and placed in a refrigerator for use just before the main food item is to be served.

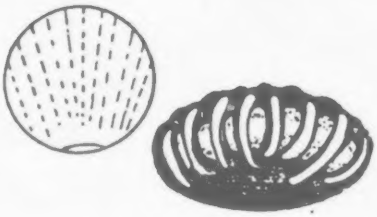
The following illustrations show common garnishes and how to prepare them.

RADISH ROSES:



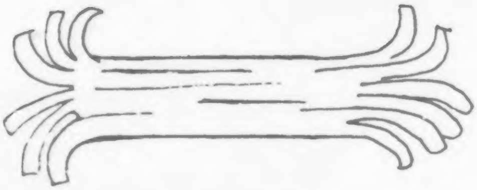
Wash radishes and cut off the root, but leave about an inch of the stem. Hold the radish, stem down. Use a sharp knife to make overlapping cuts down and into the sides of the radish. Do not cut completely through the skin, but just enough to make the red skin stand away from the center of the radish. Place in cold water to make the "petals" open and remain crisp.

RADISH ACCORDIONS:



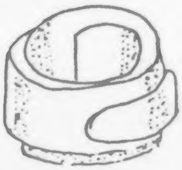
Remove the root and stem. Hold the radish lengthwise as shown. Using a sharp knife, make thin slices in the radish from the root end to the stem end, being careful to not cut completely through the radish. Place in cold water to force open.

CELERY FANS:



Cut celery into 2 1/2 inch pieces. Make short cuts, close together in one end. The other end may be cut in the same manner or left as it is. Place in cold water to make the celery curl. Green onion stems can be thinly cut in the same manner and will fan out in cold water.

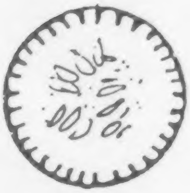
CARROT CURLS:



After peeling a large, thick carrot, cut very thin slices lengthwise with the peeler. Wrap each slice around your finger and secure with a toothpick. Place in cold water until crisp. Remove toothpick before serving.

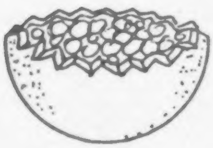
Very thin vertical carrot slices can be used as a base or nest for cottage cheese or other food instead of a lettuce leaf.

SCORED CUCUMBER:



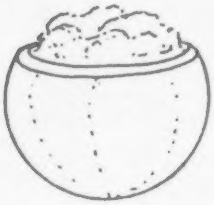
After washing cucumber, score it by running the prongs of a fork lengthwise along all sides. Slice as desired.

CITRUS CUPS:



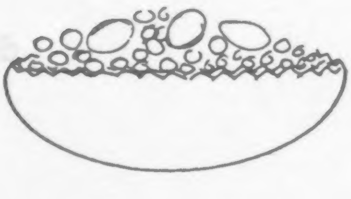
Cut in half with plain or saw-toothed edges. Remove pulp. Fill with gelatin salad, coleslaw, mixed fruit salad, cranberry sauce, or crushed pineapple.

TOMATO CUPS:



After slicing off top of tomato, hollow out a small portion. Mashed potatoes or bread crumbs can be used to fill the depression, then warm in the oven along with the meal.

MELON BASKET:



Slice a watermelon lengthwise and hollow out. A sawtooth edge adds to appearance. Using a melon baller, make balls of hollowed-out watermelon, cantaloupe, and honeydew melon. Put all the balls into the melon "boat." Scoops of sherbet can also be added for extra interest.

In choosing garnishes, keep in mind the taste combination of the garnish and the food and try to visualize the colors together. Anyone can "sling hash," but a little extra care can turn an ordinary plate of food into a work of art.

SCORECARD FOR MOLDED GELATIN SALADS

Score product as follows:

Very good	4
Good.	3
Fair.	2
Poor.	1

Appearance

Good Characteristics:	Poor Characteristics:
Attractive	Floaters and/or sinkers
Added ingredients evenly distributed	Uneven gelatin
Clear-cut edges	Layer of plain gelatin at bottom of whips
Pleasing color harmony	

Consistency

Good Characteristics:	Poor Characteristics:
Firm, but not rigid	Unhardened mixture or soft gelatin
Delicate texture	Tough or rubbery
	Tough layer of gelatin on bottom

Flavor

Good Characteristics:	Poor Characteristics:
Characteristic of ingredients used	Bland or undesirable flavor

Salad	Appearance	Consistency	Flavor

LESSON 4

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:

To be able to prepare a variety of fruit salads to add attractiveness and nutrition to the menu.

OBJECTIVES:

The participant will:

1. Prepare a minimum of 10 fruit salads using the assigned fruit.

2. List at least 3 rules for accident prevention and equipment safety in preparing salads.

3. Demonstrate principles of work simplification in preparation of salads.

SUPPLIES NEEDED:

Filmstrip projector and screen
Filmstrip "Food Service: Accident Prevention and Equipment Safety"
Fruits: (1 can each)
    Peach Halves
    Pineapple Rings
    Orange Sections
    Grapefruit Sections
    Applesauce
    Apple Rings
Garnishes:
    Dates or Prunes
    Parsley
    Blueberries
    Cottage Cheese
    Cream Cheese
    Nuts
    Coconut
    Food Coloring
    Whipped Topping
    Cherries
    Strawberries
    Marshmallows
    Jelly
    Jello Cubes
    Grated Yellow Cheese
    Dry Jello
    Raisins
5 pastry tubes

HANDOUTS:

4:1 Accident Prevention and Equipment Safety (Quiz)
4:2 Work Simplification
4:3 Fruit Salads
4:4 Salad Presentation
4:5 Suggested Salad Combinations

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 4

Module III: Vegetables and Salads with Pizazz

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Accident Prevention and Equipment Safety	View filmstrip "Food Service: Accident Prevention and Equipment Safety"
A. Discuss questions in class	Take review test and discuss
II. Principles of work simplification	Class discussion on how to use principles of work simplification can be used to prepare fruit salads
A. Discuss Handout 4:2	
III. Preparation of fruit salads	Prepare a variety of at least 10 salads using assigned fruits and appropriate garnishes
A. Discuss Handout 4:3 - Fruit Salads	Group 1 - Peach halves Group 2 - Pear halves
B. Discuss Handout 4:4 - Salad Presentation	Group 3 - Pineapple rings Group 4 - Orange and Grapefruit sections
C. Discuss Handout 4:5 - Suggested Salad Combinations	Group 5 - Applesauce and Apple rings Practice using pastry tube
IV. Discuss variety of salads possible using assigned fruits	Class vote for group of salads with most originality Evaluation of Fruit Salads - Handout 4:5 Discuss other ideas for salads
V. Plan for next session on fresh vegetable salads FF pp. 405-414	Choose recipe for next week on fresh vegetable salads Plan list of supplies needed for teacher Exchange recipes

ACCIDENT PREVENTION AND EQUIPMENT SAFETY

T F 1. When spills occur, they should be wiped from the floor immediately to prevent falls.

T F 2. Walk carefully in the kitchen and run only when it is necessary.

T F 3. When using a ladder, it is necessary to have an assistant hold the ladder.

T F 4. To avoid falls or other injuries, carry only as much weight as you can safely manage.

T F 5. When cleaning up broken glass, pick up the larger pieces with your hands and use a broom or brush and a distpan to pick up the rest of the pieces.

T F 6. Sharp knives are safer than dull knives

T F 7. When cutting with a knife, use strokes that move away from your body.

T F 8. When not in use, a knife should be left on a counter top where it can be clearly seen.

T F 9. Always turn the food slicer off and unplug it before using your hands to clear food from the blade area.

T F 10. Clean the slicer blade from the edge to the center.

T F 11. Light a gas oven as soon as possible after opening it.

T F 12. Use a long-handled utensil to place meat or vegetables in boiling water.

T F 13. Keep handles of cooking utensils on the stove turned toward the edge so they can be reached easily.

T F 14. A wet pot holder will help to avoid burns when you are picking up hot items.

T F 15. When using a deep fryer, lower the fryer basket gently into the cooking oil.

T F 16. Before placing a plug into an electric outlet, check the condition of the plug and cord and be sure the plug corresponds to the outlet.

T F 17. Avoid standing on a wet surface when using electrical equipment, because a wet surface may cause a dangerous fall.

T F 18. To serve a hot liquid, place the container on the counter and allow the person you are serving to pick it up.

WORK SIMPLIFICATION

Work simplification is the process of making a job easier. It is the organized use of common sense to find easier and better ways of doing work.

1. Make rhythmic and smooth-flowing motions.
2. Make both hands productive at the same time.
3. Make hand and body motions few, short and simple.
4. Maintain comfortable working positions and conditions.
5. Locate materials for efficient sequence of motions.
6. Use the best available equipment for the job.
7. Locate activity in normal work areas when possible.
8. Store materials in an orderly manner.

To apply principles of work simplification, use these approaches:

1. Eliminate the unnecessary work.
2. Combine operations.
3. Rearrange the sequence of operations.
4. Simplify the necessary operations.

FRUIT SALADS

1. Choose fruit according to the purpose for which it will be used. Sliced or diced pears are suitable for gelatin salads and are less expensive than pear halves. Pineapple rings come in various sizes for salads with cottage cheese, but crushed or tidbits are more suitable for gelatin salads.

2. Fresh fruit should be stored in the refrigerator.

3. Canned fruit should be kept in a cool, dry place for no longer than one year.

4. After fruit has been opened, if all is not used, it should be covered and put into the refrigerator.

5. Fresh berries and soft fruit should be held in shallow pans to prevent crushing.

6. Large enough pieces should be served, so identity of fruit will not be lost.

7. A sharp knife should always be used in preparing fruit.

8. Preparation of raw fruits is important.
    a. Discard spoiled fruit; wash and use injured fruit at once.
    b. Wash and dry fruits that have smooth skins before they are stored in the refrigerator.
    c. Do not wash berries, cherries or grapes before storing. Wash before using.
    d. Avoid overhandling the fruit.

9. Apples or bananas should be sprinkled with or dipped in a solution of ascorbic acid, orange juice, pineapple juice, etc. to keep them from turning dark.

10. Canned fruits should be drained well with the cut side down.

11. Dip fresh fruits which are to be peeled into hot water to help remove skins.

SALAD PRESENTATION

Eye appeal is the purpose of every presentation, whether the food is hot or cold. It is especially important for cold foods because they lack the come-on of an appetizing aroma. On the other hand the fresh colors and textures of many cold foods offer more visual potential than most hot dishes. There are three essentials to consider in presentation: height, color, and unity.

HEIGHT

Height gives a salad interest and importance. A raised surface or high point calls attention to itself. A flat and level surface is monotonous and self-effacing.

Height in a salad can be in one of two forms: actual or implied. Actual height in a leafy salad, for example, may be achieved by loosely arranging the greens on the plate so that they are higher in the center than toward the edges of the plate. Figure 1 shows the difference this makes.

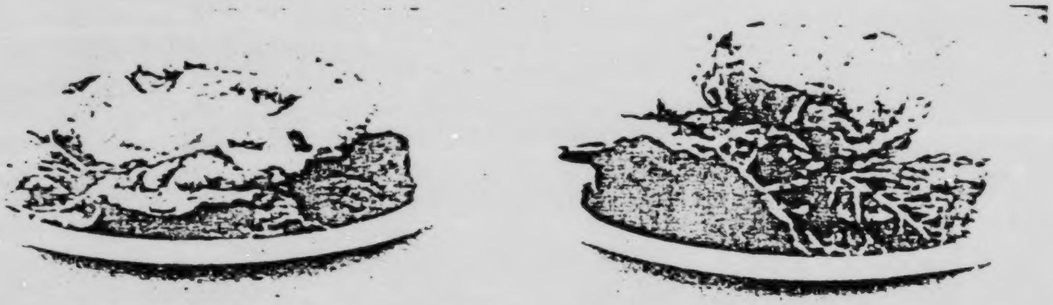


FIGURE 1 Actual height in a salad arrangement
The romaine leaves on the right, arranged for maximum height, make a far more interesting salad than the flat arrangement on the left. (Photo by Pat Kovach Roberts)

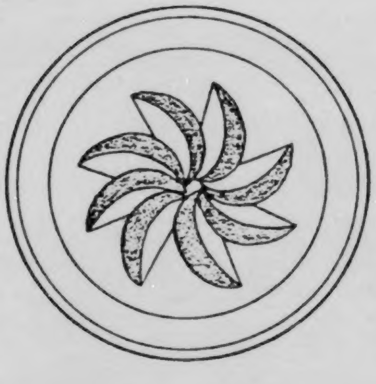


FIGURE 2 Implied height
A pinwheel arrangement gives the effect of height on the plate by focusing the eye on a central point.

Another way of achieving height is by adding a garnish that has some height. For instance, a plate of sliced cucumbers may be given actual height by adding a bouquet of parsley.

Where actual height is difficult to attain, implied height, or an illusion of height, can often be achieved by causing the eye to focus on a particular point. This can be done in several ways. One is by arranging ingredients in a pattern that guides the eye to that point, as in Figure 2. Another is to use an eye-catching ingredient or garnish to establish a focal point. If the point is near the center the salad will appear tall.

COLOR

Color is very, very important in cold foods. Take a plain ungarnished coleslaw and see how dull it looks. Add a wedge of tomato, serve it on bright romaine lettuce, and see how color transforms it.

Many people feel the more color in a salad the better, but this philosophy doesn't work out well in practice. Too many colors tend to confuse the eye and dissipate the attention. Three colors are really all that is needed. They can even be various shades of the same color, such as the three greens of a cucumber salad served on lettuce and garnished with parsley.

A limit of three colors is not a hard-and-fash rule. There will be salads where flavor combinations override the color rule, as in a mixed-fruit salad where you might have a whole rainbow of color. But as long as a salad has at least three colors there is no need to add ingredients or garnishes just to add more color.

There are no precise formulas for choosing and arranging colors in a salad. Colors are like flavors: some go well together and some don't. Bell pepper and tomato colors complement each other; carrot and tomato together create color confusion. The way to learn to handle color in a salad is to experiment with it and follow good examples of other people's work.

UNITY

Creating unity in a food presentation can be compared to putting round pegs in round holes. Unity refers to the relationship of the whole salad to the serving piece on which it is presented. The layout of the salad must fit the shape of the salad plate.

Salads are usually presented on round plates. This means that the lines, forms, and shapes of the salad ingredients must be arranged in a pattern that fits harmoniously into a circle. The pattern may repeat the curve of the plate's edge, or echo its roundness on a smaller scale, or complement it with balance and symmetry.

The pattern begins with the rim of the plate. Never place anything on the rim; it is the frame of your design. If you use a lettuce liner you can arrange it in a circle within the rim to repeat the shape.

The examples on this page illustrate how various patterns can be used to complement the circular shape of the plate. Figure 3 is a salad of sliced tomato served with egg wedges. Not all these items are round, but they

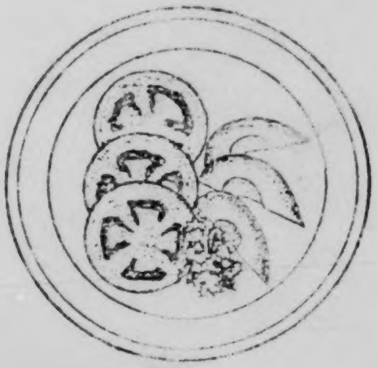


FIGURE 3 Odd shapes can form a circular pattern

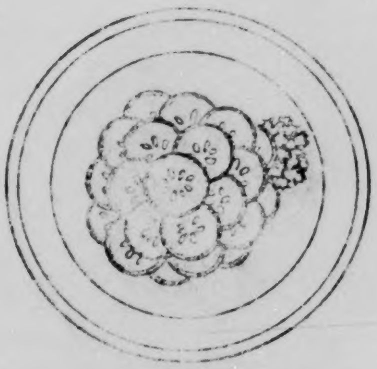


FIGURE 4 Circles in circles on a circle

are placed in a circular pattern. This not only unifies the salad but adds implied height by focusing the eye on the center of the plate.

Figure 4 is an arrangement of cucumber slices. They themselves are little circles, and when placed in a circular arrangement they echo and re-echo the roundness of the plate, creating a unified presentation. Parsley sparks the pattern with contrast.

Some other possible arrangements utilize straight lines in circular patterns, and curves that repeat the curve of the plate's edge. (Figure 5)

Often a round lettuce liner can help to unify a salad composed of stiff linear shapes or a diversity of shapes. If the ingredients are grouped symmetrically and there is a focal point in the center of the plate, the effect is one of unity in spite of the awkward shapes. Figure 6 shows asparagus spears and tomato slices in a balanced arrangement with a bouquet of parsley in the middle for height and focus.

The cold luncheon plate follows the same rules of presentation. Figure 7 shows a harmonious arrangement of the salad-sandwich luncheon plate.

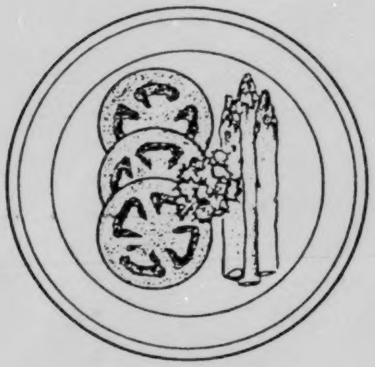


FIGURE 6 Balance and a central focal point create unity in spite of dissimilar shapes

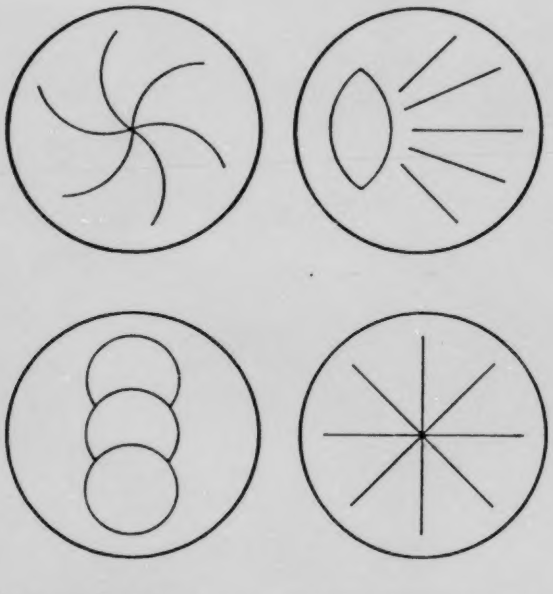


FIGURE 5 Curvilinear lines and straight lines in circular patterns harmonize with plate shape

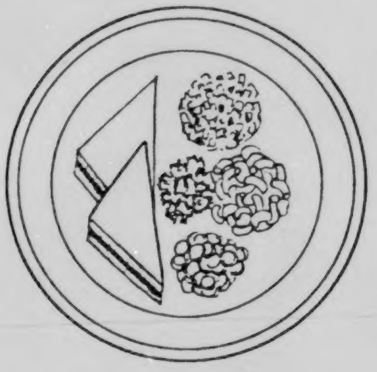


FIGURE 7 Symmetrical arrangement for a salad-sandwich plate

GARNISHING

Many a salad is brought to life by an appropriate garnish used as an accent, a color contrast, a focal point. On the other hand there is no need to garnish a salad that is already colorful and well designed. Often an ingredient of the salad itself can take over the function of a garnish by its position, shape, and color, and there is then no point to adding a further garnish. The most effective garnish is something bright, eye-catching, contrasting in color and pleasing in shape. Look at the raw materials available to you in terms of bits of shape and color and be creative. Do limit your choice to things compatible in taste and spirit with the salad itself.

Use your garnishes in odd numbers - one, three, five. Stick to one garnish or a group of such go-togethers as a black olive, a green olive, and a cherry tomato. Place the garnish or group of garnishes in one spot only. To make this point clear, look at the bad example on the right and the good example on the left in Figure 8. The one on the right scatters the attention; the one on the left concentrates the attention and thus helps to unify the presentation. The garnish must alwasy be planned as part of the total presentation.

Keep in mind that a garnish should play the role of an accent and should not steal the show. Garnishes cut into fancy shapes may draw attention to themselves and diminish the salad, as an overdressed woman is outdone by her jewels and furs. In addition the labor cost of creating such garnishes cannot be justified for the individual salad plate.

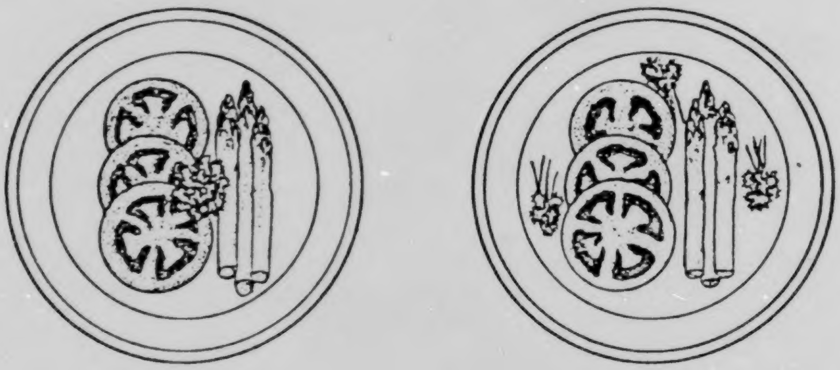


FIGURE 8 Placing the garnish
Grouping the parsley sprigs in the center pulls the salad together. Placing them symmetrically around the edge dissipates the attention and creates a helter-skelter effect even though it fills out the round form of the plate.

Table 10.1 SUGGESTED SALAD COMBINATIONS

Ingredients	*Dressing*	*Garnish*
Fruit salads		
Diced apple, celery rings, and chopped pecans	Mayonnaise or cooked dressing	Salad cherry or bright berries
Diced appple, half sections of orange	Fruit dressing	Strips of date
Apple julienne, pineapple tidbits, orange and grapefruit sections	French	Chopped red and green pepper
Apple, orange, and grapefruit segments in alternating arrangement	Poppyseed and honey	Green pepper ring
Apricot halves, pineapple, and orange segments	Fruit dressing	Spiced prune
Avocado, pineapple, and orange segments	French	Sliced stuffed olive
Avocado and grapefruit sections	Celery seed	Sliced kumquat
Banana chunks rolled in chopped peanuts with pineapple ring	Fruit	Orange sections
Molded cranberry and orange	Fruit	Orange sections
Bing cherries, mandarin oranges, and slivered almonds in black cherry gelatin	Fruit	Frosted green grapes
Grapefruit and red-apple sections	Honey	Seeded Tokay halves
Grapefruit and pineapple sections with chopped green pepper and diced cucumber	Honey	Tarragon jelly cubes
Orange diced, shredded carrot, and raisins	Sour cream	Celery rings
Peach half filled with cranberry relish	Fruit	Green grapes
Diced pineapple, orange, and celery in lime gelatin	Fruit	Salad cherry
Pineapple ring, honeydew-melon balls, and orange sections	Fruit	Fresh berries
Pineapple fingers, sliced orange, green grapes	Fruit	Shredded coconut
Pineapple chunks and green grapes	Fruit	Fresh strawberry
Pineapple tidbits with grapefruit and apple segments	Poppyseed	Crumbled blue cheese
Pineapple chunks, celery rings, chopped nuts	Fruit	Stuffed prune
Spiced prune with pineapple ring	Honey	Mandarin orange
Crushed pineapple and diced cucumber	Fruit	Slivered almonds
Grated carrot, celery rings, and raisins or peanuts	Combination	Spanish peanuts
Cabbage, celery, and chopped green pepper	Combination	Orange slice
Shredded carrot, pineapple tidbits, diced celery	Mayonnaise	Nuts
Shredded cabbage, radish slices, celery rings	Sour cream	Green pepper ring
Perfection—molded chopped cabbage, celery, green pepper, and pimento	Combination	Pimento strip
Whole-kernel corn, cut green beans, chopped celery, onion, green pepper, and pimento	Combination	Stuffed olive
Cole slaw	Cream	Tomato wedge
Cucumber and sweet onion slices	Sour cream	Chopped parsley
Green limas, sliced green onions, celery rings	Combination	Carrot curl

Reproduced from: Terrell, Margaret E., PROFESSIONAL FOOD PREPARATION Second Edition, John Wiley & Sons, Inc.
1979, pp. 279 and 281.

LESSON 5

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:

To demonstrate good techniques in the preparation of a good quality vegetable salad.

OBJECTIVES:

The participant will:

1. Demonstrate proper techniques in the preparation of a good quality vegetable salad.

2. Demonstrate proper techniques in using hand and mechanical equipment in the preparation of vegetable salads including a French knife.

3. Describe some of the many products available for making vegetable salads, how to handle them and how to combine them for interesting salads.

SUPPLIES NEEDED:

Slide projector, screen and tape recorder
"Cold Food Preparation - Salads"
French Knife
Cutting Board
Cutting Knife
Peeler
Egg Slicer
Scissors
Hand Salad Maker
Melon Ball Scoop
Grapefruit Knife
Ingredients for Salads and Dressings Using Student List

HANDOUTS:

5:1 Vegetable Salads
5:2 Effect of Storage Procedures on Lettuce
5:3 Equipment
5:4 Scorecard for Vegetable Salads
5:5 Salad Dressings
5:6 Salad Dressing Evaluation

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 5

Module III: Vegetables and Salads with Pizazz

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Buying Fresh Produce	
A. Should be fresh, bright color, crisp and firm	
B. Buy in season	
C. Buy only what you can use and hold without spoilage	
II. Preparation of Vegetable Salads	View filmstrip "Cold Food Preparation - Salads"
A. Discuss Handout 5:1 - "Vegetable Salads"	
B. Discuss results of Handout 5:2 - "Effect of Storage Procedures on Lettuce"	Evaluate lettuce on Handout 5:2 - "Effect of Storage Procedures on Lettuce"
C. Discuss ideas for Salad Bars	
III. Proper equipment for making vegetable salads - hand equipment	Display of hand equipment
A. Cutting board - sanitary and easily cleaned	Students practice using cutting board and French knife or other hand equipment
B. French knife 1. Grasp knife firmly 2. Place blade point on cutting board 3. Grasp food. Curl finger tips under 4. Balance top edge of blade against knuckles 5. Shove knife downward with a forward slicing motion 6. Wash knife immediately and place in drawer or knife rack	Students demonstrate the following: Chop Cube Julienne Dice Shred Grate
C. Paring knife 1. Use only sharp knives 2. Use cutting strokes away from body 3. Stainless steel knives avoid discoloration of lettuce	
D. Peelers - carrots, potatoes, etc.	
E. Egg slicer - slice beets, carrots, potatoes	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
F. Kitchen scissors 1. Cut marshmallows, figs, dates, grapes, parsley, etc. 2. For sticky foods dip blades in hot water or food in powdered sugar	
G. Hand salad maker	
IV. Mechanical equipment for making salads	
A. Attachments for mixer - Handout 5:3	Student will practice using attachments for mixer shredding carrots or cabbage
B. Electric chopper and mixer	
C. Electric slicer - tomatoes, cheese, onions, carrots, cabbage, lettuce and celery	
V. Preparation of vegetable salad	In small groups, prepare a good quality vegetable salad using recipes in FF 405-415 One group prepare a relish plate
VI. Discuss evaluation of vegetable salads using scorecard	Evaluate salads using Scorecard for Vegetable Salads - Handout 5:4
VII. Salad Dressings	
A. Discuss information sheet 5:5 - Salad Dressings	
B. Prepare one or more of the following salad dressings: 1. Mayonnaise 2. Cooked salad dressing 3. French dressing 4. Fruit salad dressing 5. Variation of French dressing	Evaluate salad dressings: Handout 5:6 - Salad Dressing Evaluation Sample salad dressings with vegetable salads Refrigerate dressings for possible use in next class
VIII. Plan for next session on miscellaneous salads	Plan list of supplies needed for next class Complete recipe exchange
A. Choose a starchy salad, a main dish salad and a relish tray with a dip	

VEGETABLE SALADS

You can judge a quality salad by applying these standards:

1. A good salad is simple.
2. A good salad is colorful.
3. A good salad is pretty to look at.
4. Most salads should have an underliner or as base.
5. The greens should be firm and crisp, moist, but not wet.
6. Ingredients should be in sizes easily managed with a fork.

Salad greens

The most commonly used salad green is iceburg lettuce. Other frequently used lettuces include butterhead, bibb, romaine, curly endive, and escarole. Other leafy vegetables used in salads are turnip and mustard greens, regular or red cabbage, and Chinese cabbage.

To prepare salad greens use the following steps:

1. Select fresh, crisp salad greens. Clean and refrigerate them as quickly as possible.

2. Remove soiled or damaged outside leaves.

3. To clean iceburg lettuce, remove the core by hitting the core end sharply on the counter, then twist the core to remove it. Run water into the area where the core was removed and separate the lettuce leaves. Turn the core end down and drain.

4. Wash salad greens in lukewarm water because this removes soil more thoroughly than cold water and will not wilt the greens if done quickly. Add 4 T. salt to 1 gal. water to remove bugs. Do not allow greens to soak in water. Finish with a rinse in very cold water or with a cold water spray.

5. An alternate method of cleaning greens or other vegetables which are not cooked is to add 2 T. household liquid chlorine bleach to each gal. of water. Dunk the vegetables up and down or around several times during the soaking process. Rinse the vegetables in fresh running water.

6. Drain thoroughly on wire racks.

7. Place racks in containers or on trays and cover with clean, damp cloths or store in tightly closed containers before chilling in the refrigerator. Cover greens so they will not become dehydrated.

8. Chill in the refrigerator at least 2 hours to crisp.

9. All salad greens are fragile and must be handled with care. They bruise and discolor easily. Hand tearing or using a stainless steel knife prevents discoloration.

Salad Vegetables

Many types of vegetables can be used in salads. Foods can be cooked, uncooked, hot, cold, or frozen. Salads are a way to use good cooked leftover vegetables. The nutrients are better retained and leftover vegetables will taste better in a salad than if re-served as a heated vegetable. Remember, however, that poor salad ingredients cannot be disguised by adding salad dressing.

When preparing vegetables, be careful to preserve taste and texture. Remove the inedible parts of vegetables. Be sure they are free from defects.

Many vegetable salads are made of one or more raw vegetables cut into various shapes. When two or more vegetables are combined they should be chosen for their complementary flavors and colors.

Many vegetables do not have good holding qualities. You should cut them as close as possible to the intended use time, so that they do not dry out or shrivel at the edges.

Tips in preparing vegetable salads include:

1. To prepare vegetables such as carrots and celery, wash them thoroughly, pare them if necessary, and cut them to desired shape. Use a sharp stainless steel knife to cut vegetables to avoid bruising them during preparation.

2. Ingredients should be somewhat uniform in size. Pieces should be large enough to be identified but not so large that they are difficult to eat.

3. Keep cold salads cold. The prime rule in the preparation of cold salads is to have all ingredients chilled by keeping them refrigerated except when assembling. Use cold dishes and refrigerate preportioned salads.

4. Salads in a salad bowl may not need a liner.

5. The use of a large amount of lettuce to garnish salads usually is wasteful, for it may not be eaten; in general, one-half of a large leaf or one smaller leaf is enough. Shredded lettuce as a base is particularly useful in arranging placed salads.

6. Avoid complex "placed" arrangements. Simple, natural salad arrangements are difficult to improve upon, and a "placed" salad often looks overhandled.

7. Vegetables such as cauliflower, broccoli, and cabbage may contain tiny mites which can be removed by soaking in cold, salted water for thirty minutes. When vegetables have finished soaking, lift them out of the water. Do not leave them in the water, as water-soluable vitamins will be lost.

8. Drain canned vegetables before using.

9. To remove the skin of tomatoes, dip them into boiling water until the skin is loosened and then dip the tomatoes into cold water.

10. Cut or shred firm vegetables such as carrots and cabbage. Firm vegetables are easier to eat if they are cut or shredded.

11. Marinate tomato wedges in French dressing before adding to other ingredients and they will be less watery. Fresh tomatoes or cucumbers should not be mixed in combined salads until the salad is ready to be served. The acid from these vegetables will tend to wilt the other vegetables in the combinations.

12. An entire stalk of celery can be cut at one time with a French knife and then swept into a colander. Wash under a strong stream of water.

13. Onions should be held under lukewarm water when cleaning and cutting. They can be cut unpeeled in quarters from top to bottom, then the skin removed from quarters by pulling the skin out and down. This method will help avoid discomfort and that tear-stained look.

14. All stems should be broken from the leaves of spinach before washing.

15. Usable celery tops and outer leaves of lettuce and cabbage should not be discarded as they contain valuable nutrients.

16. Nuts used in salad are coarsely cut or broken and added last so they will not become soft.

17. Bare hands must not be used in mixing salads. If it is necessary to mix or toss ingredients in a large container, long plastic gloves covering hands and arms should be used. Two plates will help in turning salad mixtures.

18. If vegetables are not as crisp as desired, enclose them in a plastic bag with a small amount of ice and refrigerate for a few minutes.

19. Store salads covered in the refrigerator before serving. Use Saran wrap, wax paper, or aluminum foil. If salads are covered, there will be less drying, absorption of odors, and giving off of odors than if they are stored uncovered.

20. For green salads, add the dressing just before serving.

5:1
4

Table 10.1 ***(Continued)***

Ingredients	Dressing	Garnish
Tossed romaine, iceberg, and curly chicory	French, Thousand islands, or blue cheese	Cheese or garlic croutons
Caesar—Romaine, parmesan and blue cheese, peas, chopped pickle, celery, and pimento	Garlic flavored oil, raw egg, and lemon juice	Croutons and anchovy fillets
Green Goddess—salad greens, grated cheddar, and shrimp or crabmeat	Green Goddess	Tomato wedges
Broken iceberg lettuce and fresh spinach, chopped onion and celery	French	Chopped hard-cooked egg
Long green beans, beat slices, marinated limas and snipped chives	Mayonnaise	Shredded cheddar cheese
Tomato and cucumber slices	French	Sliced young onion
Tomaso aspic with vegetables	Mayonnaise	Ripe olive
Diced zucchini and tomato with celery rings	French	Sliced hard cooked egg
Kidney beans, chopped celery, onion, and pickle	Combination	Julienne ham and Swiss cheese
Club—macaroni, hard-cooked egg, chopped pickle, olives, celery, onion, and green pepper	Combination	Parsley and cherry tomato
Salmon flakes, dices celery and eggs, chopped pickle	Mayonnaise	Ripe olives
Shrimp salad with avocado slices	Mayonnaise	Ripe olives
Lobster salad with tomato slice	Mayonnaise	Pickle slice
Potato, frankfurter, hard-cooked egg, cucumber, and minced onion	Combination	Stuffed olive
Tuna salad with cucumber slices	Combination	Sliced hard-cooked egg
Chef's salad—iceberg and romaine lettuce; chopped green onion; celery rings; julienne beef, ham, tongue, or chicken; Swiss cheese, and anchovy fillets	2 parts mayonnaise and 1 part French mixed	Part of the julienne meat and cheese
Vegetable Salads		
Asparagus tips, tomato and cucumber slices	French	Shredded cheddar
Main-Dish Salads (cheese, egg, fish, meat)		
Asparagus tips with chicken salad	Mayonnaise	Stuffed olive
Avocado filled with chicken or crab salad	Mayonnaise	Grapefruit sections
Cottage cheese, herb flavored with sliced tomato	Combination	Watercress
Cottage cheese with pineapple ring or peach half	Fruit	Salad cherry
Chicken salad, grapefruit segments	Mayonnaise	Whole salted almonds
Jellied chicken with pineapple and slivered almonds	Mayonnaise	Pepper ring
Egg salad and tomato wedges	Combination	Parsley sprig
Frozen cream cheese and fruit	Fruit	Walnut halves
Ham salad with asparagus tips	Combination	Tomato wedge
Crab Louis—crabmeat, hard-cooked egg, and tomato slices, wedges, or cherries	Thousand island	ripe olives
Marinated asparagus cuts, celery rings, and tomato chunks	Sour cream	Sliced green onion

Reproduced from: Terrell, Margaret E., PROFESSIONAL FOOD PREPARATION Second Edition, John Wiley & Sons, Inc., 1979, pp. 280-281.

Effect of Storage Procedures on Lettuce

1. Cut out the core of a fresh head of lettuce with a sharp, pointed knife.
2. Run cold tap water into the cut end and loosen the leaves.
3. Place the cut end down on a wire rack to let the water drain out.
4. Separate the leaves and store the leaves in the ways listed in column 1 (one leaf for each part).
5. Record appearance in column 2.

1	2						
Method of storage (for about 24 hours)	Appearance						
	Crisp	Fairly Crisp	Wilted	Dried	No discoloration	Slightly Discolored	Discolored
Room temperature, unwrapped							
Refrigerator, unwrapped							
Airtight jar at room temperature							
Airtight jar in refrigerator							

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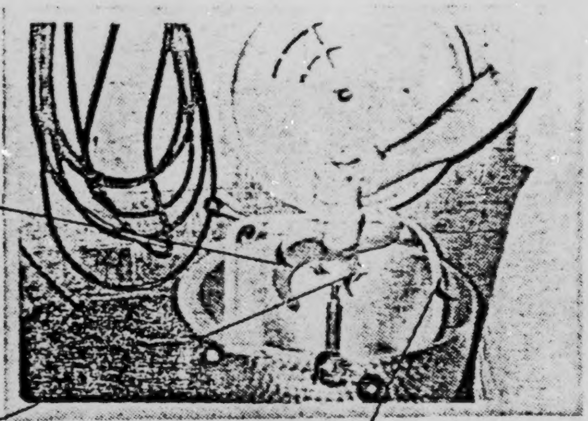
CHOPPER - MIXER

A chopper-mixer is the newest piece of equipment available for food preparation. If used correctly, it can eliminate many hours of chopping with a French knife in a vegetable preparation area. The speed at which this machine chops is almost unbelievable.



It uses two knives to cut food as it mixes. Food is not crushed as the blades rotate. Its blades turn at either 1700 or 3200 revolutions per minute (two speeds), and it will rapidly reduce food to a puree if care is not exercised.

The chopper-mixer may be used for different purposes by adjusting its blades up or down on its shaft. With blades high on the shaft and chopping in water, items such as lettuce, cabbage, celery, onions, and apples can be chopped into salad-size pieces in from 3 to 7 seconds. The time required to make mayonnaise is about 30 to 40 seconds or as rapidly as salad oil can be added.

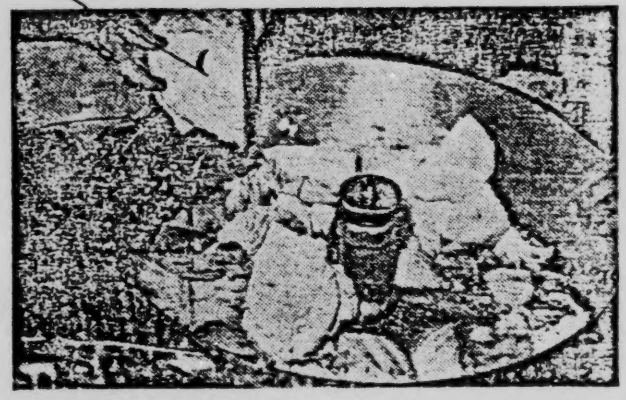
To make a meat loaf mixture the unground pieces of meat, whole onion, celery, pepper, and loaves of bread are put into the mixer. The cutting-mixing time is from 60 to 90 seconds on No. 1 speed.

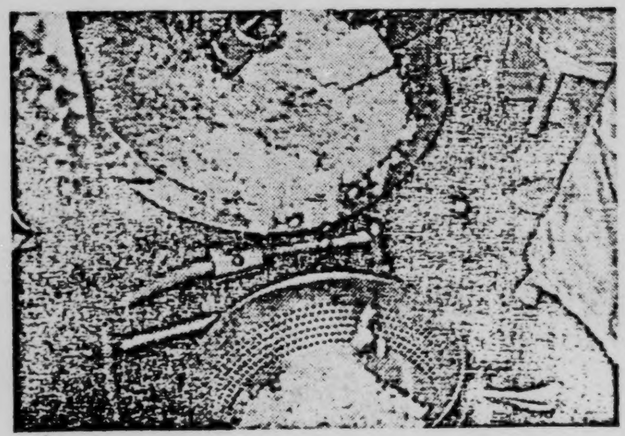
KEY POINTS

- To cut vegetables in water, remove the stir paddle.
- Sharpen the blades with an emery stone each day before using.
- Pause a second or two when shifting from low to high speed or vice versa.
- To grease: Use grease gun every week on all fittings.

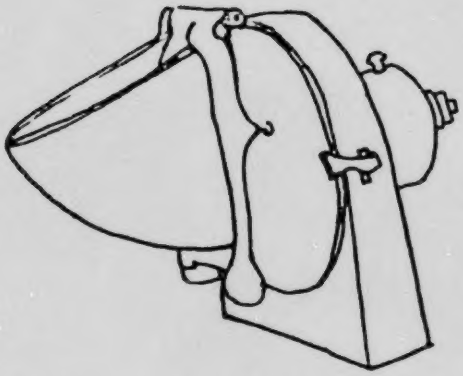
TO CLEAN

- Remove shaft with blades.
- Remove blades at end of each day's use.
- Clean bowl and posts with a mild detergent solution.
- The rubber gasket must be removed and cleaned.
- Rinse and dry all parts.





Uses for Selected Attachments



Vegetable Hopper--The purpose of the vegetable hopper cover is to force the food through the hopper. The rotor in the hopper turns to force the food through the plate. Do not add food while the rotor is in motion, as fingers might get caught in the hopper.

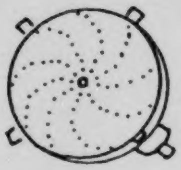
Plate attachments are available for use with the vegetable hopper.

Slicer Plate

1. Slicing vegetables for salads and soups.
2. Slicing firm fruits, such as apples for salads.
3. Slicing other vegetables, such as potatoes for scalloping and cabbage for steaming.

HINT: Fasten a plastic bag to the machine to catch the food. The bag fills easily, stores easily in the refrigerator, reduces discoloration of vegetables, and keeps food moist.

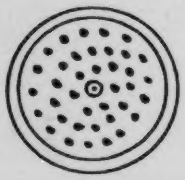
Grater Plate



1. Grating hard vegetables, such as carrots, parsnips, and turnips.
2. Grating dry bread for crumbs.
3. Grating hard cheese.

HINT: Use a stiff brush to clean the plates. Toast the bread to a gslden brown before grating.

Shredder Plate



1. Shredding cabbage for coleslaw.
2. Shredding vegetables for soups and salads.

HINT: Shredding onions into a plastic bag reduces eye and nose irritation.

HINT: Put a piece of bread through the chopper after grating cheese.

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5:3
3

FOOD SLICERS

A food slicer slices food into accurate portions. It saves labor because it slices more rapidly than can be done by hand.

There are hand-operated slicers and electric slicers. There are slicers that require the food to be hand fed into the blade. There are gravity-fed slicers that slice the food as the weight of the food slides it into the blade.

USES:

- Slicing meat products.
- Slicing vegetables such as onions, tomatoes, carrots, cabbage, lettuce, celery.
- Reversing cabbage and lettuce slices to dice them when they pass the blade.

SAFETY PRECAUTIONS

Safety precautions must be observed while using a slicer:

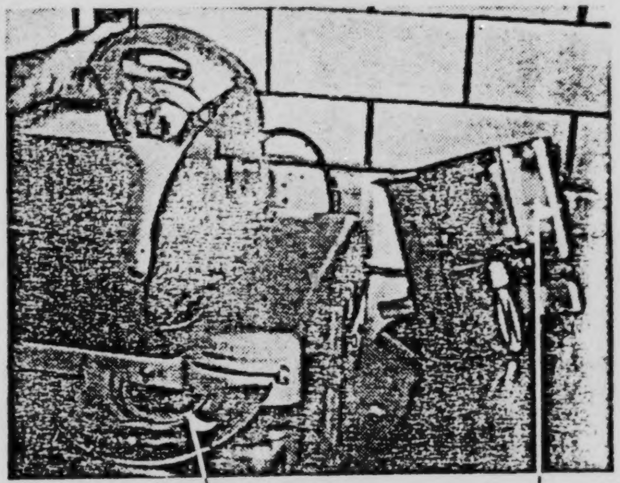
- All guards must be over the blade.
- The slicing spacer must be closed when cleaning the blade.

MAINTENANCE

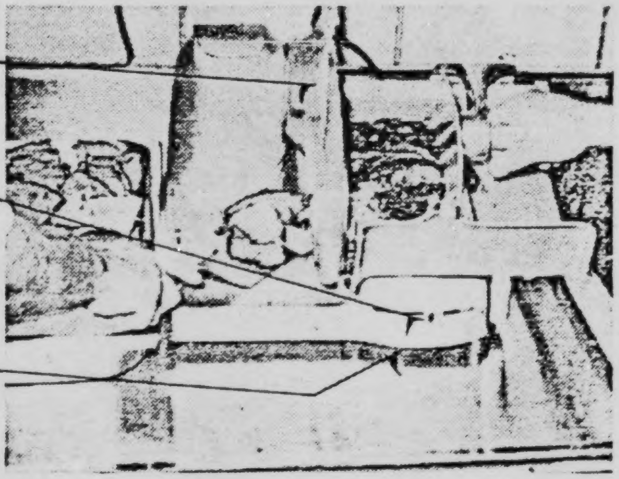
- Lubricate the carriage shaft.
- Oil all oil openings monthly.
- Sharpen the blade before use. As a minimum, sharpen it at least weekly.

TO CLEAN

- Wash with a warm detergent solution after each use.



- To clean out scraps: Remove carriage. Remove guards over blade and open the flap below and to the left of the blade. Wash all parts.
- Rinse with hot, clear water.
- Dry with a paper towel or clean cloth.



Reproduced from Simplified Manual for Cooks by Frank O. Moosbert, 3122 Garden Avenue, Des Moines, Iowa 50310

5:3
4

VEGETABLE PEELER

This machine removes the outer skin from vegetables such as potatoes or carrots. It reduces labor to a minimum. It is a very simple piece of machinery, but to use it properly requires certain procedures for best results.

A peeler can waste great quantities of food rapidly by grinding vegetables to a pulp that is flushed down the drain. Therefore, the length of time it runs after vegetables have been added is most important.

POSSIBLE CAUSES FOR TROUBLE

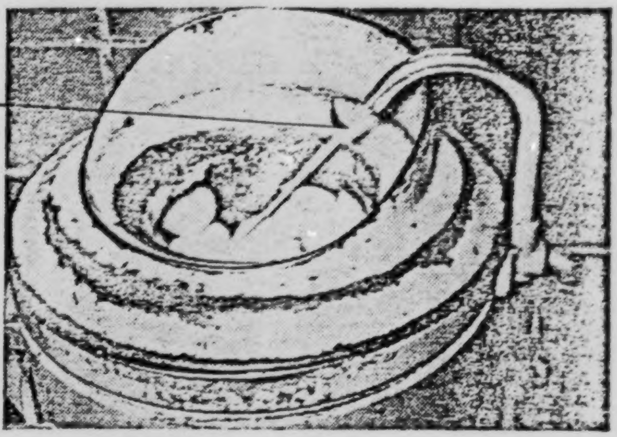
- Peeler is not level.
- Insufficient water running while machine is peeling vegetables.
- Holes rusted in peel trap (which catches peelings) may release enough peelings to clog sewer lines.

TO OPERATE

- Sort vegetables by size – large potatoes separated from small potatoes.
- Start peeler - turn on water, then add vegetables.
- Do not overload.
- Do not operate more than 3 minutes for each load.
- Keep water flowing until finished peeling.

TO CLEAN

- Clean after each use.
- Rinse with water.
- Remove top, then remove bottom from inside the peeler.
- Use a brush to remove peelings while rinsing with water.
- A detergent may be used.
- Empty the peel trap, rinse thoroughly, and sanitize.
- Dry the exterior and replace parts.
- Oil every six months.



SCORECARD FOR VEGETABLE SALADS

Score product as follows:
Very good..............4
Good...................3
Fair...................2
Poor...................1

Appearance

Good Characteristics:	Poor Characteristics:
Clean	Signs of rust or soil
Crisp	Soggy
Colorful with contrast	Faded
Ingredients unidentifiable	Too many ingredients
Tossed carefully	Solid mass
Fresh	Wilted

Temperature

Cold	Room temperature Soggy and tough

Texture and Flavor

Pleasing texture	Stringy and tough
Interesting flavor combinations	Bland
Seasoning that develops the flavor of salad ingredients	A dressing or seasoning that is too strong

	APPEARANCE	TEMPERATURE	TEXTURE and FLAVOR
#1			
#2			
#3			
#4			
#5			

SALAD DRESSINGS

When selecting a dressing for a salad, consider its flavor and consistency in relation to other parts of the salad. Dressing adds flavor - usually sharp and tangy - to the salad. The type of dressing should complement, not mask, the salad ingredients. Sometimes a choice should be offered a patron as in a salad bar.

I. Types of salad dressings

  A. French dressing is a mixture of oil, vinegar and seasonings.

    1. Clear French dressing - separates upon standing - temperary emulsion

    2. Creamy French dressings stay mixed

    3. Emulsions - forms a film around the oil droplets, keeping them apart and preventing the liquids from separating. Egg and pectin ore emulsifiers.

  B. Mayonnaise is smooth and creamy

    1. It is made by beating oil very slowly into seasoned vinegar and egg.

    2. It is milk flavored so it blends well with extra seasonings.

  C. Cooked dressing has a cooked white-sauce-and-egg base, with vinegar and butter stirred in. It is fluffy and creamy, has a zippy flavor, and is delicious in foods such as potato salads.

  D. Salad dressing is a rich smooth blend of mayonnaise and cooked salad dressing.

II. Ingredients needed for making salad dressings are:

  A. Acid - vinegar, usually cider vinegar.

  B. Seasoning - salt, pepper, mustard, sugar, spices, herbs

  C. Thickness - cornstarch and egg yolks for boiled dressing.

  D. Emulsifier - egg yolk for mayonnaise.

  E. Liquid - milk in boiled dressing. In other dressings, oil and vinegar.

SALAD DRESSING EVALUATION

VARIETY	YES	NO
Appearance:		
Solid		
Bright		
Body & Texture:		
Creamy		
Oily		
Lumpy		
Flavor:		
Salty		
Bland		
Spicy		
Tart		
Sweet		
Oily		

Remarks:

Preparation Used:

LESSON 6

NOTES TO THE INSTRUCTOR

PURPOSE OF LESSON:
To prepare a salad dressing and describe salads with which it can be used.

OBJECTIVES:
The participant will:

1. Evaluate the one day food intake for her/himself using the Basic Four Food Guide.
2. Demonstrate proper techniques in preparing a starchy or miscellaneous salad.
3. Demonstrate proper method of preparing a main dish salad.
4. Demonstrate preparation of a relish tray with a dip.
5. Evaluate the short course.

SUPPLIES NEEDED:
Filmstrip projector
Filmstrip "Food to Grown On: The Independent Twenties"
Filmstrip "Food to Grown On: The Changing Forties"
Ingredients for salads and relish plate with dip using student list.

HANDOUTS:
6:1 Basic Four Food Group Guide
6:2 Function of Vitamins and Minerals
6:3 A Guide for Using Salad Dressings
6:4 Scorecard for Miscellaneous Salads
6:5 Evaluation Form for Short Course

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson

Module III: Vegetables and Salads with Pizazz

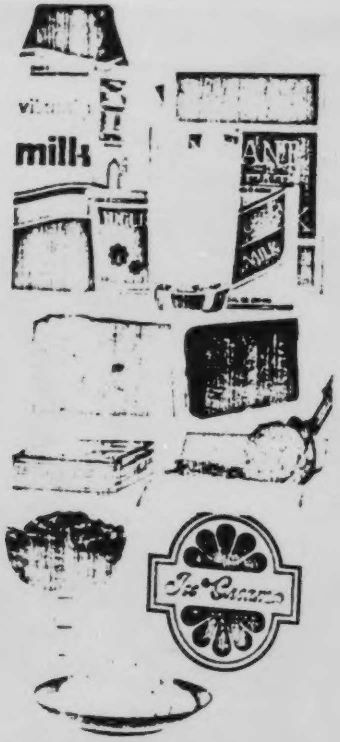
LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Good Nutrition Discuss meeting nutrient needs for individuals using Basic Four Food Guide, emphasizing Vitamins A and C and Iron Discuss Handout 6:2 - Function of Vitamins and Minerals	View Filmstrip "Food To Grow On: The Independent Twenties" or "Food To Grow On: The Changing Forties" Record nutrient intake for previous day Evaluate intake using Basic Four Food Guide Discuss how to include nutrients lacking in diet
II. Review of Salad Dressings Discuss Handout 6:3 - A Guide for Using Salad Dressings	
III. Prepare and display salads using principles presented in previous lessons	In small groups prepare assigned miscellaneous salads, including potato salad or macaroni salad, a main dish salad and a relish plate
IV. Discuss evaluation of miscellaneous salads	Evaluate miscellaneous salads using Handout 6:4 - Scorecard for Miscellaneous Salads
V. Summarize material presented in previous classes	
VI. Evaluate short course	Evaluate short course using Handout 6:5 - Evaluation Form for Short Course

Group

2 Servings/Adults
4 Servings/Teenagers
3 Servings/Children

Foods made from milk contribute part of the nutrients supplied by a serving of milk.

Calcium
Riboflavin (B_2)
Protein



Guide to Good Eating

A Recommended Daily Pattern

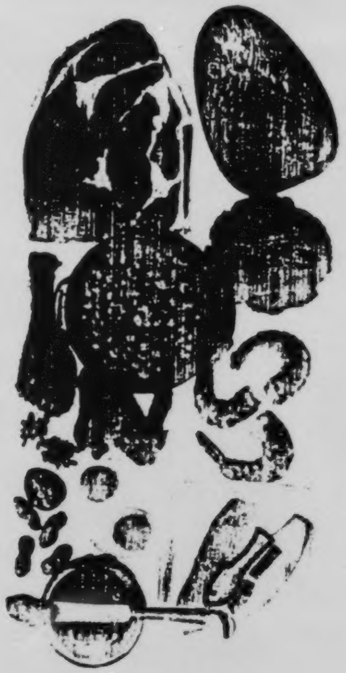
Meat

Group

2 Servings

Dry beans and peas, soy extenders, and nuts combined with animal protein (meat, fish, poultry, eggs, milk, cheese) or grain protein can be substituted for a serving of meat.

Protein
Niacin
Iron
Thiamin (B_1)



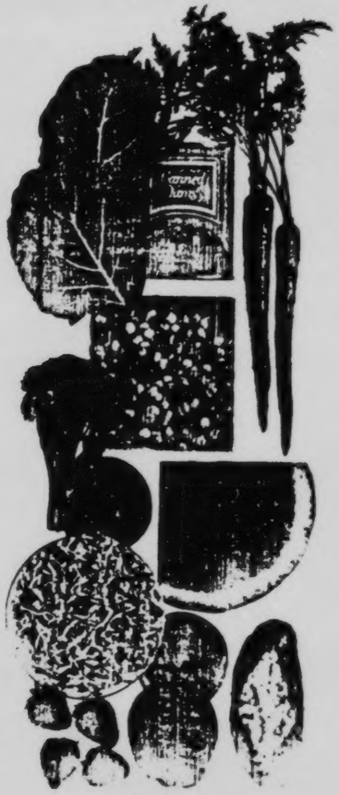
Fruit-Vegetable

Group

4 Servings

Dark green, leafy, or orange vegetables and fruit are recommended 3 or 4 times weekly for vitamin A. Citrus fruit is recommended daily for vitamin C.

Vitamins A and C



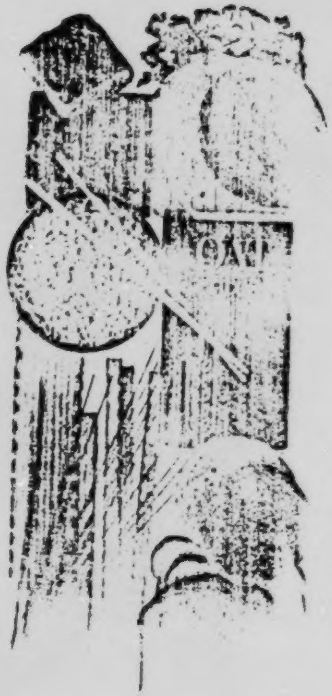
Grain

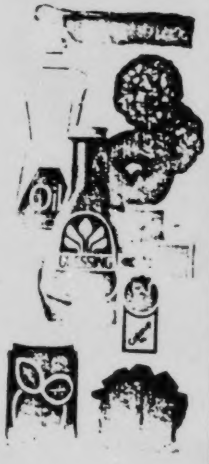
Group

4 Servings

Whole grain, fortified, or enriched grain products are recommended.

Carbohydrate
Thiamin (B_1)
Iron
Niacin





Foods and condiments such as these complement but do not replace foods from the four groups.

Amounts should be determined by individual caloric needs.

Carbohydrate
Fats

Guide to Good Eating....

A Recommended Daily Pattern

The recommended daily pattern provides the [illegible]

The recommended servings from the Four Food Groups for adults supply about 1200 Calories. The chart below gives recommendations for the number and size of servings for several categories of people.

Food Group	Recommended Number of Servings				
	Child	Teenager	Adult	Pregnant Woman	Lactating Woman
Milk 1 cup milk, yogurt OR Calcium Equivalent: 1½ slices (1½ oz) cheddar cheese* 1 cup pudding 1¾ cups ice cream 2 cups cottage cheese*	3	4	2	4	4
Meat 2 ounces cooked, lean meat, fish, poultry OR Protein Equivalent: 2 eggs 2 slices (2 oz) cheddar cheese* ½ cup cottage cheese* 1 cup dried beans, peas 4 tbsp peanut butter	2	2	2	3	2
Fruit-Vegetable ½ cup cooked or juice 1 cup raw Portion commonly served such as a medium-size apple or banana	4	4	4	4	4
Grain, whole grain, fortified, enriched 1 slice bread 1 cup ready-to-eat cereal ½ cup cooked cereal, pasta, grits	4	4	4	4	4

*Count cheese as serving of milk OR meat, not both simultaneously

"Others" complement but do not replace foods from the Four Food Groups. Amounts should be determined by individual caloric needs.

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Nutrients for Health

digestion. They are needed to build and maintain body cells, regulate body processes, and supply energy.

About 50 nutrients, including water, are needed daily for optimum health. If one obtains the proper amount of the 10 "leader" nutrients in the daily diet, the other 40 or so nutrients will likely be consumed in amounts sufficient to meet body needs.

supplies all the 50 nutrients, and because many nutrients work together.

When a nutrient is added or a nutritional claim is made, nutrition labeling regulations require listing the 10 leader nutrients on food packages. These nutrients appear in the chart below with food sources and some major physiological functions.

Nutrient	Important Sources of Nutrient	Some major physiological functions		
		Provide energy	Build and maintain body cells	Regulate body processes
Protein	Meat, Poultry, Fish Dried Beans and Peas Egg Cheese Milk	Supplies 4 Calories per gram.	Constitutes part of the structure of every cell, such as muscle, blood, and bone; supports growth and maintains healthy body cells.	Constitutes part of enzymes, some hormones and body fluids, and antibodies that increase resistance to infection.
Carbohydrate	Cereal Potatoes Dried Beans Corn Bread Sugar	Supplies 4 Calories per gram. Major source of energy for central nervous system.	Supplies energy so protein can be used for growth and maintenance of body cells.	Unrefined products supply fiber – complex carbohydrates in fruits, vegetables, and whole grains – for regular elimination. Assists in fat utilization.
Fat	Shortening, Oil Butter, Margarine Salad Dressing Sausages	Supplies 9 Calories per gram.	Constitutes part of the structure of every cell. Supplies essential fatty acids.	Provides and carries fat-soluble vitamins (A, D, E, and K).
Vitamin A (Retinol)	Liver Carrots Sweet Potatoes Greens Butter, Margarine		Assists formation and maintenance of skin and mucous membranes that line body cavities and tracts, such as nasal passages and intestinal tract, thus increasing resistance to infection.	Functions in visual processes and forms visual purple, thus promoting healthy eye tissues and eye adaptation in dim light.
Vitamin C (Ascorbic Acid)	Broccoli Orange Grapefruit Papaya Mango Strawberries		Forms cementing substances, such as collagen, that hold body cells together, thus strengthening blood vessels, hastening healing of wounds and bones, and increasing resistance to infection.	Aids utilization of iron.
Thiamin (B_1)	Lean Pork Nuts Fortified Cereal Products	Aids in utilization of energy.		Functions as part of a coenzyme to promote the utilization of carbohydrate. Promotes normal appetite. Contributes to normal functioning of nervous system.
Riboflavin (B_2)	Liver Milk Yogurt Cottage Cheese	Aids in utilization of energy.		Functions as part of a coenzyme in the production of energy within body cells. Promotes healthy skin, eyes, and clear vision.
Niacin	Liver Meat, Poultry, Fish Peanuts Fortified Cereal Products	Aids in utilization of energy.		Functions as part of a coenzyme in fat synthesis, tissue respiration, and utilization of carbohydrate. Promotes healthy skin, nerves, and digestive tract. Aids digestion and fosters normal appetite.
Calcium	Milk, Yogurt Cheese Sardines and Salmon with Bones Collard, Kale, Mustard, and Turnip Greens		Combines with other minerals within a protein framework to give structure and strength to bones and teeth.	Assists in blood clotting. Functions in normal muscle contraction and relaxation, and normal nerve transmission.
Iron	Enriched Farina Prune Juice Liver Dried Beans and Peas Red Meat	Aids in utilization of energy.	Combines with protein to form hemoglobin, the red substance in blood that carries oxygen to and carbon dioxide from the cells. Prevents nutritional anemia and its accompanying fatigue. Increases resistance to infection.	Functions as part of enzymes involved in tissue respiration.

FUNCTION OF VITAMINS & MINERALS

I. Function of Vitamin A in body:

  A. Fat-soluble vitamin, stable to heat, body stores it, oxidation destroys it,

    1. Keeps skin and mucous membranes healthy
    2. Aids body in resisting respiratory infection
    3. Helps eyes adapt to semi-darkness and protects them against degenerative changes
    4. Vitamin A is essential in working with other nutrients in the proper growth and development of bony structures and teeth.

  B. Plant sources of Vitamin A:

    1. The brighter the color, orange, yellow, and/or the darker green, the greater its Vitamin 'A' content.
    2. Rich sources:
      a. Carrots
      b. Sweet potatoes
      c. Broccoli
      d. All green leafy vegetables
      e. Apricots
      f. Tomatoes.
    3. Foods rich in Vitamin A served at least **three times a week.**

II. Function of Vitamin C (Ascorbic Acid):

  A. Water-soluble. Oxidizes readily when exposed to air and light. Destroyed more rapidly as temperature increases.

    1. Prevents scurvy - a disease recognized by softening of gums, loosening teeth, bleeding under the skin and into soft tissues. Rare in this country.
    2. Keeps capillary walls healthy. Bleeding under the skin in tiny red spots, or larger areas, is a symptom of low Vitamin C.
    3. Prevents easy bruising and promotes rapid healing of cuts and broken bones and bruises.
    4. Prevents "growing pains", or "childhood rheumatism", as well as relieving "aging pains" and some kinds of rheumatism aches.
    5. Prevents spongy gums and easy bleeding of gums.

III. Vitamin B Complex (Thiamine, riboflavin, niacin, folic acid): Water soluble - oxidizes readily

  A. Function:

    1. Normal appetite and digestion
    2. Healthy nervous system.

  B. Plant Sources:

    1. Green leafy vegetables - spinach, broccoli, leaf lettuce, endive. B vitamins are more prevalent in protein foods: thiamine - pork; niacin - nuts; riboflavin - milk.

IV. Iron:

A. Function:

1. Necessary for production of red blood cells, which transport oxygen to all body cells.
2. Prevents anemia with its symptoms of tiredness, paleness, and weakness.

B. Plant Sources:

1. Green leafy vegetables
2. Dried fruits: raisins, dates and prunes; lima, soybeans, and peas.

A GUIDE FOR USING SALAD DRESSINGS

TYPE	REGULAR USE	AS A SAUCE	AS A SEASONING	SPECIAL
Mayonnaise	Hearty meat, egg and fish salad	Add lemon juice and egg yolk, heat and use as mock Hollandaise with fish and egg dish.	Stir 2-3 T. into cream sauce for special flavor.	Combine with thick sour cream, minced mixed vegetables, season highly for dip with chips or toast fingers.
	Potato salad Cole slaw Greens Vegetable mixture	The vegetables may be marinated with French dressing before mayonnaise is added.		
	Fruit Gelatin	Combine whipped cream, a little fruit juice, or boiled dressing made with fruit juice with mayonnaise.		
French	Mixed green salad Lettuce & tomato Fruit salad Vegetable salad	Add minced parsley and chopped egg--serve with fish.	Add 2 T. to cooked green beans.	Drizzle on French loaf, foilwrap, and heat.
Italian	Tossed salad Sliced cucumber and onion salad Sliced tomatoes Bean salad Home garden salad	Add sauteed onion and serve hot with vegetables or kidney beans.	Add 1-2 T. to canned soup (particularly good with tomato or bean soup.)	Use as marinade on cooked vegetables (can be served cold as appetizer.)
Roquefort	Mixed green salad Tossed salad Citrus salad Molded salad Egg and fish salad Apple salad	Serve spooned over hot fluffy baked potato.	Add to deviled egg filling.	Use as part of liquid in molded salads. Mix with cream or cottage cheese for dip.

A GUIDE FOR USING SALAD DRESSINGS (cont.)

TYPE	REGULAR USE	AS A SAUCE	AS A SEASONING	SPECIAL
Russian	Head Lettuce Slaw Egg salad	Spoon over tiny hot new potatoes; top with minced onion.	Brush over meat or fish fillets before broiling.	Add to beaten egg when breading fish or shellfish.
Tartar	Fish and shellfish salad.	Combine half and half with savory white sauce.	Spread on bread for toasted cheese sandwiches.	Serve on chilled broccoli, asparagus, or green beans.
Oil & Vinegar	Tossed salad Mixed green vegetable salad Avocado Sliced tomatoes Some fruit salads	With broiled or fried fish fillets, cold salmon steaks and hot or cold shellfish.	Add 1-2 T. to hamburger or meat loaf mixture before mixing. Add 1-2 T. to hot pasta (macaroni, spaghetti, etc.) before adding sauce or cheese.	Heat, add chopped onion and crumbled bacon; pour over garden lettuce or add minced parsley and pour over hot thinly sliced potatoes.
Garlic	Tossed greens Caesar salad Specialty salad Plain lettuce Vegetable salad	With fish and egg dishes. With hot and cold vegetables. With egg plant or artichokes.	Brush on meat or hamburgers before broiling or roasting. Add to gravies for garlic flavor. Drizzle on long loaves of bread and heat.	Spread on bread slices and saute lightly; use as base for poached or scrambled eggs.
Cole slaw	Slaws Fish salad Macaroni salad	With diced hot potatoes and onions. With hot or cold cooked vegetables.	Add a few tablespoons to egg, fish and meat sandwich fillings; spread on fish casseroles and loaves; broil quickly.	Combine with grated sharp cheese; freeze in molds or tray. Serve with citrus and fruit salads. Use on potato salad. Add sharp mustard and use as savory sauce with hot deviled eggs.
Thousand Island	Head lettuce Tossed greens	With fish and egg dishes.	Use as spread on bread for sandwiches.	Combine with sliced egg, relish, and sardines for antipasto. Mix with chopped egg and cheese for sandwiches
Fruit	Fruit salad Avocado salad Mixed greens and fruits	Over gelatin dessert salads. With molded fruit and cheese salad or salad loaves. With salad-sandwich loaves.	Add a few tablespoons to gelatin and molded salads before they set. Spread lightly on pineapple or spiced peaches: broil and serve with meat and fish.	Combine with whipped cream, berries in season, diced bananas, chill; heap in melon rings and serve with thinly sliced ham.

SCORECARD FOR MISCELLANEOUS SALADS

Score product as follows:
Very good...............4
Good....................3
Fair....................2
Poor....................1

APPEARANCE SCORE:

Good Characteristics;	Poor Characteristics:
Recognizable Pieces	Too many ingredients or small pieces
Well Drained	Soggy or watery
Pleasing Color Combination	Colorless

PALATABILITY SCORE:

Combinations of pleasing flavors	Bland
Appropriate dressing	Dressing that is too strong
Combination of pleasing colors	Colorless

TEMPERATURE AND TEXTURE SCORE:

Cold	Room temperature
Crisp and fresh	Soggy or tough

	APPEARANCE	PALATABILITY	TEMPERATURE/TEXTURE
#1			
#2			
#3			
#4			
#5			

EVALUATION OF "VEGETABLES AND SALADS WITH PIZAZZ"

1. This workshop was

2. Things I learned that I plan to use:

3. I wish I had learned

4. If I attend another workshop, I wish you would

FOOD SERVICE EMPLOYEE SHORT COURSES

Module Four--Protein Potpourri

GOALS: Upon successful completion of this module, the participant will be able to:

1. Develop basic manipulative skills related to foodservice.
2. Develop an understanding of the basic principles of science and mathematics that condition manipulative skills.
3. Demonstrate high standards of cleanliness and personal hygiene.
4. Demonstrate proficiency in artistic principles basic to food preparation.

OBJECTIVES:

LESSON ONE: ORIENTATION

1. Operate and maintain quantity foodservice equipment efficiently.
2. Demonstrate high standards of sanitation and safety.
3. Organize work efficiently.
4. Weigh and measure ingredients accurately.
5. Follow directions fully.
6. Utilize standardized recipes in quantity food preparation and service.

LESSON TWO: SOUPS

1. Classify the kinds of soups and stocks.
2. Prepare soups and stocks according to the correct procedure.
3. Describe the service of soups and stocks.
4. Identity important nutrients in soups.

LESSON THREE: CASSEROLES, RICE, PASTA

1. List examples of pasta
2. Describe cooking techniques used in the preparation of pasta.
3. Identify the various forms of rice.
4. Prepare rice according to the correct procedure.
5. Name popular casseroles.

LESSON FOUR: BEANS, LEGUMES

1. Identify the nutritive value of legumes.
2. Classify legumes according to protein quality.
3. Prepare legumes according to the correct procedure.
4. List menu suggestions using beans and legumes.

Developed cooperatively by Occupational Home Economics, Kansas Department of Vocational Education, Wichita Area Vocational-Technical School and members of the Kansas Dietetic Association.

An equal employment/educational institution.

LESSON FIVE: CHEESE AND EGGS

1. Classify various types of cheese.
2. List important nutrients found in cheese.
3. List the functions of eggs important in quantity food preparation.
4. Identify quality characteristics of eggs.
5. List nutrients found in eggs.
6. Prepare a cheese and/or egg dish using correct procedure.
7. Evaluate cheese and egg dishes according to qualities of a standard product.

LESSON SIX: SANDWICHES

1. List important quality characteristics of hot and cold sandwiches.
2. Name the major parts of a sandwich.
3. Prepare sandwiches according to the correct procedure.
4. Describe the service of sandwiches in a main meal.
5. List examples of popular sandwiches.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 1: Orientation, Soups and Stocks   Module 4: Protein Potpourri

I. Instructor preparation for class activities

A. Assemble equipment
1. Stock pots
2. Steam jacketed kettle
3. Measuring and weighing equipment
4. Cheesecloth
5. Colander

B. Have ingredients available
1. For preparation of Beef Stock, page 477: Food for Fifty
2. For preparation of Chicken Stock, page 479: Food for Fifty

Instructor is to start preparation of stock 3 hours before class. During last hour of class, review preparation and demonstrate skimming and straining stock. Plan to freeze stock and meat for following lesson.

C. Duplicate sufficient copies of handouts
1. Goals and Objectives
2. Steam Jacketed Kettle
3. Stock Preparation

D. Assemble student handbook information in color-coded folders

II. References

A. Dennler, Louise: Food Preparation: Study Course, The Iowa State University Press, 1971

B. Kotschevar, Lendal H., Ph.D.: Standards, Principles, and Techniques in Quantity Food Production, 3rd Edition, Cahners Books International, Inc., 1974

C. Mario, Thomas: Quantity Cooking, AVI Publishing Company, Inc., 1978

D. Powers, Jo Marie: Basics of Quantity Food Production, John Wiley and Sons, 1979

E. West, Bessie Brooks; Shugart, Grace Severance; Wilson, Maxine: Food for Fifty, 6th Edition, John Wiley and Sons, 1979

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson [illegible]e: Orientation--soup stocks Module 4--Protein Potpourri

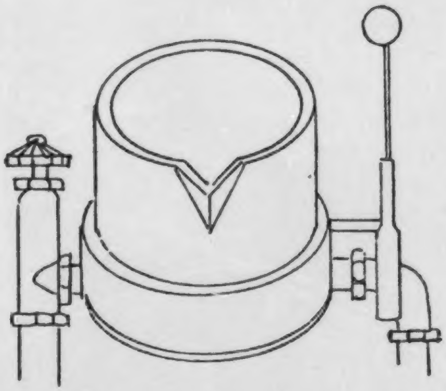
LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. General Orientation	
A. Presentation of name tags and get-acquainted activity 1. Introduce faculty and students 2. Complete enrollment procedure	Play game for introducing participants to each other: Faculty and students tell where they work and their favorite casserole.
B. Orientation to the course 1. Purpose of the course--Introduction and overview 2. Definitions a. A meat extender is added to meat to provide more servings. b. A meat alternate is a food which is not meat but contains many of the nutrients of meat, especially protein Example: soybeans, cheese	Ask students what they want to learn about soups, sandwiches, stews and casseroles. As much as possible, incorporate those requests into this module. Instructor list on board participants' ideas for meat extended dishes and for meat alternate dishes and discuss acceptability of these dishes for various clients.
3. Learn by doing, preparation and display 4. Learn some scientific principles of food preparation 5. Evaluate finished products using score cards	Overview of course. Discuss Handout 1: Goals and Objectives
6. Importance of clean-up, sanitation and safety practices. 7. Meeting place and times 8. Certificate of completion--grade if given	Explain that other employees will be using this kitchen and expect it to be clean and orderly.
C. Orientation to facility 1. Building rules and policies 2. Location of restrooms and smoking areas	
D. Student handbook 1. Dress code, personal conduct, food handling, sanitation and safety checklists 2. Procedure for tasting food--tasting spoon 3. Use of textbook, note taking and handouts	Review handouts in student handbook
4. Organization of class into teams	Assign participants into teams, according to number in class and class activities. Use color-coded folders or colored name tags.
E. Tour kitchen and work area 1. Emphasize handwashing rules and locate handwashing sinks 2. Review 3-sink method of ware-washing in student handbook 3. Discuss sanitary procedures for washing and storing equipment and utensils a. Instructor will establish policy for returning utensils and ingredients to storage areas 4. Note location and use of range top, ovens, steam jacketed kettle	Review "Team Duties". Outline general activity of this class period. Participants demonstrate proper handwashing procedures. Participants demonstrate filling of sinks, measuring sanitizer, etc. Participants demonstrate method of cleaning and sanitizing work surfaces, washing and storing utensils.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson One: Orientation--soup stocks Module 4--Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
II. Use of equipment A. Demonstrate use of scales and measuring equipment in preparation of beef stock (to be frozen until next class period)	See beef stock recipe, *Food for Fifty*, page 477 Participants demonstrate skill in using scales, measuring cups and spoons for dry and liquid ingredients.
B. Discuss handout 4:1 Steam Jacketed Kettle	
C. Discuss preparation of stocks	Discuss Handout 3: Stock Preparation
III. Safety principles related to fire safety	Show film on fire safety and demonstrate use of fire extinguisher.
IV. A. Standardized recipe--definition--discuss use of standardized recipes in quantity cooking	Examine *Food for Fifty*, 6th ed. Look up sections on soups, p. 476; sauces, p. 457
B. Format of recipes	
C. Select soup recipes from Food for Fifty to be prepared in next class	
D. Adjust recipes for desired number of servings.	Use charts for adjusting recipes, *Food for Fifty*, pages 47-62.
Instructor complete demonstration of beef and chicken stocks Prepare market order for next class.	
Assignment:	Special project over next 5 classes--for a collage, collect pictures of soups, stews, casseroles and sandwiches, including rice, pasta and legumes, cheese and eggs.
Students start recipe file of recipes related to this module Distribute glossary if used	Also see glossary, page 78 of *Food for Fifty*.

STEAM JACKETED KETTLE



The steam jacketed kettle is fast, safe, economical, and easy to use. Steam enters the jacket and comes into contact with the cold inner wall. The steam condenses (the vapor changes into liquid), conducting its heat through the wall and into the product being cooked. The steam jacketed kettle is used to braise, boil, or simmer. The kettles range in size from the 10 quart table model to the 200 gallon floor or wall model.

To operate the steam jacketed kettle, turn the boiler on and wait for the pressure to reach the proper level. Open the water valve. For electric and gas self-contained kettles, keep the water at the half-way level in the gauge glass. For kettles requiring the addition of water, fill the jacket according to the manufacturer's instructions. Check the safety valve. For the electric or direct steam kettle, turn on the steam valve or electric switch. For the gas kettle equipped with a pilot, turn on the main burner valve. (If the pilot goes out, check with your supervisor.) Adjust the heat or steam to the proper temperature and pressure. Add the food to be cooked.

When cooking is completed, turn off the steam valve and remove the food from the kettle. Fill the empty kettle with warm water above cooking level until it is time to clean the kettle. The warm water loosens food from the inside walls of the kettle.

To clean the steam jacketed kettle, open the drain valve and drain the water from the kettle. The food particles are caught in the screen that covers the draining device. Scrub the inside of the kettle with a brush, warm water, and detergent. Scrub the underside of the lid and hinges. Use the same water and detergent solution to clean the legs, pipes, and outside of the kettle. Drain the soapy water. Fill the kettle 1/3 full with warm water and rinse the inside and the outside of the kettle. Drain the rinse water from kettle. Wipe the kettle dry with a soft cloth and leave the lid open.

Safety precautions when using the steam jacketed kettle include:*

1. Guard against possible steam burns when raising the kettle lid; lift the lid away from you so that steam does not scald hands, arms, or face.
2. See that the proper water level is maintained in the water jacket.
3. If the water jacket has gone dry, do not add water to the jacket without first allowing the kettle to cool.
4. Be certain that the safety valve is in good working order.
5. If the steam pressure rises above the safety level, turn the kettle off and call a reliable service organization.
6. To prevent burns, use long-handled paddles for stirring and long-handled dippers for removing food.

*U.S. Department of Agriculture. Training Course Outline on Use and Care of Equipment. Washington, D.C.: U.S. Government Printing Office, 1960. pp. 86-90.

Stock Preparation

A. Most soups start with a richly flavored stock.

1. Flavors for stock usually come from beef, chicken, ham and fish.
2. Commercially prepared stock base is available.

B. There are three stock classifications.

1. Brown - Made from browned meat and cracked bones of beef with vegetables added.
2. White - Made from flesh and bones of veal and chicken that have not been browned.
3. Light - Made from browning only one-half of the flesh and bones.

C. Stock should be made according to the correct procedure.

1. Choose ingredients.
   - a) Cut bones (shank, neck, knuckle or fowl carcass) into three- to four-inch pieces so the water can draw out the nutritive and flavor-giving substances.
   - b) Cut meat into small pieces to draw out the flavors.
   - c) Six pounds of meat and bones are needed for each gallon of stock.
   - d) One pound of mixed vegetables (celery, onion, carrots and turnips) in five quarts of salted water are used to make one gallon. A bouquet of bay leaf, marjoram, thyme and parsley can be added for flavor.
2. In order to get the best flavor, start the meat and bones in cold or warm water and slowly bring to a slow simmer (180° to 185 °F). Cook six to eight hours for beef, four hours for veal and chicken, and one and one-half hours for fish.
3. After cooking, remove bones using a colander.
4. Cool the stock quickly in a water bath by stirring. Refrigerate at 36° to 40° F.
5. Clarify by removing congealed fat and pouring off the top liquid leaving the sediment in the bottom. The stock is now ready to add to the other soup ingredients to make appetizer soups or main dish soups.

Lesson 2: Soups and Sauces

I. Instructor proparation for class activities

A. Assemble Equipment

B. Have ingredients available to prepare recipes selected by instructor to demonstrate stock soups and cream soups

C. Suplicate sufficient copies of handouts.

1. Soup vocabulary
2. Stock vocabulary
3. Soups
4. Back to Soup
5. White sauce
6. Scorecard for soups.

D. Textbook: Each student should have access to a copy of Food for Fifty for the remainder of this short course.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 2: Soups and Sauces

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. History of soups--each nationality has favorites	Students name favorite ethnic soups
II. Classification of soups	List examples on board
A. Milk or stock base, light or dark	Discuss Handout 1: Soup Vocabulary Examine soup and stew recipes: Food for Fifty
B. Clear and light or thick and hearty	
C. Served hot or cold	
D. According to place on menu 1. Appetizer--served in small quantity (6 ounces) a. First course preceeding a full meal b. Meat extracts stimulate appetite Examples: Consomme Bouillon Broth	
2. Hearty main dish soups a. Served for luncheon or supper b. Take the place of an entree c. Should be as satisfying as a casserole or stew d. May complement salad or sandwich and dessert e. 8-10 ounce serving provides substantial nutrition f. Examples: Bisque Chowder Gumbo Etc. 3. Salad and Dessert Soups a. Gaspacho b. Fruit soups: Swedish Chinese orange soup	Students discuss characteristics of hearty soups
III. Preparation of stock soups	Handout 2: Stock Vocabulary Class discussion of preparation of beef, chicken, fish and ham stocks and recipes using these stocks
A. Stock is made by simmering meat, poultry, fish and/or vegetables in water to extract their flavor 1. Brown stock, White stock--whether meat is browned 2. Mirepoix--a mixture of vegetables 3. Clarification of stock	

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 2: Soups and Sauces

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
4. Fish stock 5. Ham stock 6. Alternate--use of commercial soup bases	
B. Variations of stock soups	See Variations, pages 476-478: Food for Fifty
C. Standards 1. Clear 2. Flavorful 3. Appropriately colored--deep brown to almost colorless	Prepare 2 soups from beef stock. Examples: Beef Barley Minestrone Pepper Pot Soup
D. Thickening soup 1. Addition of plain starch or roux 2. Addition of vegetable, meat or fish puree 3. Combining puree, roux and cream	Prepare 2 soups from chicken stock. Examples: Mulligatawny Soup, page 483: Food for Fifty Chicken Rice Soup, page 485: Food for Fifty Handout 4: Back to Soup
E. Compare cost of commercial and non-commercial beef bases	Use Handout 3: Soups
IV. Preparation of cream soups	
A. Basic sauce for cream soup 1. Methods of preparation of white sauce a. Saucepan b. Double boiler c. Steamer d. Microwave 2. Thickness of white sauce 3. Characteristics of high quality white sauces	Handout 5: White Sauce Prepare 2 cream soups. Examples: Cheese soup Cream of vegetable soup Chicken velvet soup Corn chowder Cream of tomato soup
V. Soup accompaniments, garnishes for flavor, decoration to complete a meal, salad, sandwich or bread	
VI. Serving soups--temperature A. Hot--150°-160° F. B. Cool--40°-45° F.	Participants taste soups at various temperatures
VII. Evaluation of soups	Handout 6: Scorecard for Soups
VIII. Plan items to be prepared in following class Adjust recipes Prepare market order	

Soup Vocabulary

Bisque--Thick, rich cream soup usually made from shellfish such as lobster and shrimp.

Borsh--Russian beet soup made with beef stock, beets, tomatoes, sour cream, and seasoning.

Bouillabaisse--Fish soup or stew made with five or six different fish or shellfish, flavored with white wine and seasoned with saffron.

China Cap--Long pointed strainer used for straining sauces, soups, stocks and other liquids or semi-liquids.

Chowder--Thick soup of fish or vegetables with milk and potatoes.

Cold Soups--Soups classed according to their consistency and served cold. Examples are jellied consomme and vichysoisse.

Consomme--Clear broth made with chicken, veal or other meat.

Madrilenne--Clear consomme with a tomato flavor that can be served jellied or hot.

Skimmer--Flat, stainless steel perforated disk connected to a long handle used to skim grease or food particles from soups, stock, or sauces.

Special Soups--Includes all soups originating in a certain location and associated with that place. Examples are New England clam chowder and French onion soup.

Thick Soup--Soups which derive thickness from products added to the stock, or from pureed vegetables. Examples are cream soups, chowders and bisques.

Thin Soup--Clear, rich liquid prepared without the use of a thickener. Examples are French onion and tomato madrilenne.

Vichysoisse--Cream of potato soup served cold.

Stock Vocabulary

Bouillon--Clear white meat stock.

Bouquet Garni--Aromatic herbs such as parsley, thyme, bay leaf and rosemary, tied together and cooked with soups, sauces and gravies for flavoring.

Clarify--Make clear by skimming or by adding egg white and straining.

Crack Bones--Cut into small pieces with a meat saw to expose more surface to cooking area.

Garnish--Cleaned, rough-cut, raw vegetables cooked with stock for flavor.

Raft--Coagulated mass which rises to the top of a soup stock pot which must be removed with a skimmer.

Stock--Liquid in which meat or meat bones, fish or fish bones and/or vegetables have been cooked to extract flavor. There are four main stock types: brown, chicken, fish and white.

Stock Pot--Large, round, high-walled pot made of metal used for boiling and simmering items. Sizes range from 2 1/2 gal. to 40 gal.

SUMMARY

Extracting liquefiable foods is the basis of stock, sauce, and soup cookery. The difference between a sauce or a soup very often lies in its texture only. The principles of making cream soups are like the ones of making sauces. Sauces have a more intense flavor than soups, if sauces and soups of the same raw ingredients are compared. The addition of starch changes a clear liquid to a thickened one. For the sake of quality, Western cuisine uses a starch-fat combination, cooked for a little while, called roux. Sauces are classified into four basic roux sauces and one egg yolk-butter sauce called Hollandaise. Sauce cookery can be compared to bar mixing. The five basic sauces are changed with the addition of different wines, liquors, cream, cheeses, herbs, spices, condiments, and special cut garnishes into a hundred different sauces. These are highly cherished by Western luxury cuisine. Sauce Hollandaise, the fifth of the basic or mother sauces, is the only one not based on starch. The texture of this sauce comes through the emulsification of fat and egg yolks, which enclose fine air bubbles, instead of the saturation of starch granules with liquid. Sauces based on eggs have a limited holding time and must be made fresh whenever needed.

Sauce and soup cookery have a definite structure. Thus, they are easy to master and practice. Most important are the personal standard of understanding how a sauce should look and taste, the use of fresh quality ingredients, and careful, systematic work. Just as in all the other fields of cookery, the same principles are used over and over again.

ASSIGNMENT SHEET #1--COMPARE COST OF COMMERCIAL AND NONCOMMERCIAL BEEF BASES

Yield = Actual gallons of product produced

Cost of product = A. Cost of one can commercial beef base

B. Cost of beef shank

Cost per gallon = Cost of product ÷ yield

Labor hours = Hours needed to prepare product

Hourly rate = Wages paid per hour

Total labor cost = Labor hours x rate

Labor cost per gallon of stock = Labor cost ÷ yield

Total cost per gallon = Cost of product per gallon + labor cost per gallon

Discussion questions

1. Do you pay for convenience? Yes______ No______
2. If you had your choice of product which would you prefer?________________
   Why? ____

	Commercial	Beef shank
Yield	______per can	______
Cost of product	______per can	______total
Cost per gallon	______	______
Labor hours	______	______
Hourly rate	______	______
Total labor cost	______	______
Labor cost per gallon stock	______	______
Total cost (Add #3 and #7)		
#3	______	______
#7	______	______
Total cost per gallon	______	______

BACK TO SOUP

STRUCTURE OF SOUPS

Food in a more liquid than solid state, eaten with a spoon, is called *soup*. Soups are well liked by the public because they are easy to eat and digest. They are filling, nourishing, and not costly. . Soups probably began as kettle stews. Many of today's regional specialty soups clearly indicate such a development.

For the cook, soups are easy to make when modern equipment is used with an understanding of the structure of soups. Soups can be grouped into clear soups or thickened soups.

Clear Soups

Clear soups may be unclarified plain broth or clarified consomme. Broth is leftover liquid from the boiling of protein foods. For a better flavor, vegetables are added to the broth. Vegetable broth is used too, but seldom as a single flavor. Other flavor-giving ingredients are even added to tomato soup. In home cookery, vegetable soups are made without meat additives. Commercial cookery boasts even vegetable flavors with some kind of protein stock.

Consommé. Consommé is clarified broth or stock; its strength is improved with extra vegetables and proteins. It is served either clear or with a garnish. The garnish may be cooked with the soup, as in "Consommé Julienne", or prepared completely extra and added to the finished soup at the last minute, as in "Consommé Celestine".

Thickened Soups

Thickened soups are grouped by 1) the addition of plain starch or roux for better flavor and texture, 2) the addition of a vegetable, meat or fish pulp (puree) for thickening, 3) the combining of puree, roux and, for absolute refinement, cream. Thickened soups, just as clear soups, can be served strained and plain, or they may have a garnish prepared in the same way as for the consommé.

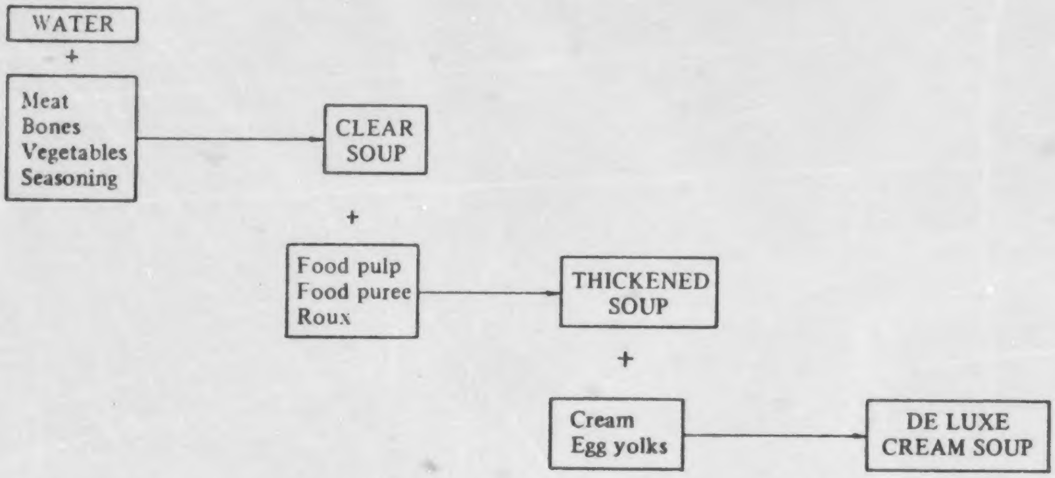


TABLE 21-7 FLOWCHART OF SOUPMAKING

White Sauce

Type	*Milk*	*Flour*	*Fat*	*Salt*	*Uses*
Thin	1 cup	1 tablespoon	1 tablespoon	1/4 teaspoon	soups
Medium	1 cup	2 tablespoons	2 tablespoons	1/4 teaspoon	sauces; gravies
Thick	1 cup	3 tablespoons	3 tablespoons	1/2 teaspoon	souffles
Very thick	1 cup	4 tablespoons	4 tablespoons	1/2 teaspoon	croquettes

METHODS OF PREPARATION

Method I. Saucepan or Frying Pan

1. Melt fat in saucepan or heavy frying pan.
2. Add flour and salt: blend until smooth.
3. Remove from heat.
4. Add milk in small portions and blend thoroughly after each addition until all milk has been added.
5. Place over direct heat: stir constantly: bring to a boil and boil for 1 minute.
6. Record total working time:____________minutes.

Method II. Double Boiler

1. Melt fat in the upper part of the double boiler. Have the upper section of the double boiler over hot water.
2. Add flour and salt: blend until smooth.
3. Add milk gradually: stir thoroughly after each addition of milk.
4. Continue heating with occassional stirring until the mixture has thickened. Heat an additional 5 minutes after the sauce has thickened to insure gelatinization of the starch.
5. Record total working time:____________minutes.

Method III. Can Be Used Where a Low-fat Product Is Desired.

1. Blend the flour and salt with 1/4 cup of the cold liquid. Stir until all lumps of flour have been separated.
2. Add the remaining milk. Stir thoroughly.
3. Place the mixture in a saucepan over direct heat: stir constantly until the mixture boils: boil for 1 minute.

*4. As the mixture boils, add approximately half the indicated amount of fat for type of sauce being prepared: stir thoroughly until the fat is blended into the sauce.

5. Record total working time:____________minutes.

---

*Fat may be omitted entirely if desired. This method is not recommended when the full amount of fat is to be used: it is extremely difficult to add full amount of fat.

CHARACTERISTICS OF HIGH QUALITY WHITE SAUCES

Appearance: White to creamy (dependent on type and amount of fat used); opaque.
Consistency: Smooth; even starch distribution and gelatinization.
Thin: Like "thin cream"; flows freely.
Medium: Fluid, but thick; flows slowly; like "whipping cream" before whipping.
Thick: Thick; holds imprint of spoon or slightly "mounds" on stirring.
Very Thick: Will not flow; holds cut edge, even while warm.
Flavor: Very bland, mild; fat used may affect the flavor.

SCORECARD FOR SOUPS

Soup	Appearance	Consistency	Flavor

SOUPS

Standard product:

1. Pleasing in taste and texture—good body
2. Flavor must be well blended
3. If type indicates a clear soup, then product should be clear, bright, and sparkling
4. Consistency of cream soup varies with individual taste, but for the most part cream soups are the consistency of thin white sauce, while chowders and bisques are much thicker.
5. Appearance as well as taste should show evidences of richness.
6. Appropriate garnishes

Defects:

Poor color—dull, presence of sedimentation
Ingredients overcooked and mushy
Appearance and flavor give impression of watery product
Curdled soups
Too thick cream soups
Excess fat on stock soups
Under or over seasoned—not characteristic of type or kind

FOOD SERVICE EMPLOYEE SHORT COURSE

Module 4: Protein Potpourri

Lesson 3. Casseroles with Rice and Pasta

I. Instructor preparation for class activities

A. Assemble equipment
   1. Filmstrip projector and cassette tape player
   2. Equipment necessary to prepare rice and pasta recipes selected by students

B. Have ingredients available to prepare recipes selected. See recipes suggested for this lesson.

C. Duplicate sufficient copies of handouts
   1. Measurements and Yields for Various Types of Rice
   2. Pasta or "Macaroni Foods"
   3. Cooking Pasta
   4. Success Indicator: Main Dish Score Card

D. Obtain filmstrip on Bread and Cereal group of the Basic Four Food Groups, such as Food for Life by Tupperware.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson Casseroles with Rice and Pasta Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Rice	
A. Forms 1. Brown 2. Milled, white 3. Parboiled, such as "Uncle Ben's" 4. Precooked, instant, "Minute Rice"	Students examine samples of these forms of rice
B. Nutritional contribution--Basic food groups Convenience foods containing rice	Show Bread and Cereal filmstrip from Food for Life, Tupperware
C. Cooking methods for rice 1. Correct measurement of rice and water result in fluffy rice a. Too little water--rice will be hard, small in volume b. Too much water--sticky 2. Some cooks warm rice in fat or oil before adding water 3. Rice increases in volume to three times its original size Do not wash rice; it washes away some vitamins and minerals	Prepare brown and white rice in oven, steam-jacketed kettle, on top of stove and in microwave See Handout 1: Measurements and Yields for Various Types of Rice
D. Casseroles and other menu items containing rice--adjust recipes for items to be prepared	Prepare Rice Pilaff, page 191: Food for Fifty Prepare Spanish Rice, page 193: Food for Fifty Prepare Brown Rice and Spinach Casserole Prepare Fried Rice, page 191: Food for Fifty
E. Reheating rice	
II. Pasta--Alimentary Paste	Show pictures of different kinds of pasta Handout 2: Pasta or "Macaroni Foods"
A. Examples 1. Spaghetti, macaroni--60 or more varieties 2. Can be used interchangeably, weight for weight 3. Made from high gluten durum wheat 4. Noodles contain at least 5.5 percent by weight of egg or egg yolk solids	
B. Cooking techniques 1. Use large volume of salted, rapidly boiling water. Oil may be added to prevent foaming 2. Time carefully--done at tender, yet firm stage; al dente	See Cooking Macaroni, Spaghetti or Noodles, page 191: Food for Fifty Handout 3: Cooking Pasta

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 5: Casseroles with Rice and Pasta Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
3. Rinse, hold in colander over hot water	
4. Pasta increases in volume to twice its original size	Discuss characteristics of well-prepared pasta
C. Nutrients found in pasta 1. Describe difference in nutritional content of rice, pasta and noodles 2. Fortified macaroni has protein added in the form of soy flour. One ounce in dry form equals one ounce protein	Prepare Poppy Seed Noodles, page 194: *Food for Fifty* Prepare Noodles Romanoff, page 194: *Food for Fifty*
III. Casseroles	Plan menus using a variety of pasta dishes Students describe popular casseroles served in their institution and share recipes
A. Types	
B. Nutritional contribution; compare with meat, potato, vegetabl meal	
C. Cost	Cost a recipe for a popular casserole
IV. Evaluate prepared products	Handout 4: Success Indicator: Main Dish Score Card
V. Plan items to be prepared in the following class Adjust recipes Prepare market order	

MEASUREMENTS AND YIELDS FOR VARIOUS TYPES OF RICE

Type of Rice	Uncooked Rice	Liquid*	Salt	Butter, Margarine, or Oil	Approx. No. of ½ cup servings	Approx. yield
Parboiled Rice (or Brown Rice)	1¾ qts. (2 lbs. 14 ozs.)	3¾ qts.	2½ tbsps.	¼ cup (2 ozs.)	50	1½ gals.
	2¼ qts. (3 lbs. 11 ozs.)	1¼ gals.	¼ cup	¼ cup (2 ozs.)	64	2 gals.
Regular-Milled White Long Grain Rice	2 qts. (3 lbs. 4 ozs.)	1 gal.	2½ tbsps.	¼ cup (2 ozs.)	50	1½ gals.
	2¾ qts. (4 lbs. 8 ozs.)	1¼ gals. + 2 cups	¼ cup	¼ cup (2 ozs.)	64	2 gals.
Regular-Milled White Medium Grain Rice	2½ qts. (4 lbs.)	1 gal.	2½ tbsps.	¼ cup (2 ozs.)	50	1½ gals.
	3 qts. (4 lbs. 14 ozs.)	1¼ gals.	¼ cup	¼ cup (2 ozs.)	64	2 gals.

* Liquids other than water which can be used include: chicken stock, beef broth, bouillon, consomme; or tomato, vegetable juice, fruit juices such as orange or apple (1 part water, 1 part juice); or maraschino cherry juice (3 parts water, 1 part juice).

(see reverse side for cooking methods)

NOTE: For drier, fluffier rice, use 1 to 2 cups less liquid for each quart of uncooked rice.

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RICE COUNCIL OF AMERICA

STOCKPOT METHOD

Combine ingredients in stockpot and bring to a boil over high heat. Stir once or twice. Cover with a tight-fitting lid or heavy-duty foil. Lower heat to simmer; cook, without removing lid, 15 minutes (20 to 25 minutes for parboiled rice; 45 minutes for brown rice). If rice is not quite tender or liquid is not absorbed, replace lid and cook 2 to 4 minutes longer. Remove from heat and transfer immediately to shallow pan(s). Keep warm until served.

STEAM-JACKETED KETTLE METHOD

Follow manufacturer's directions. When rice is done, transfer immediately to shallow pan(s). Keep warm until served.

OVEN METHOD

Use boiling liquid. Place ingredients in shallow pan(s); stir. Cover with tight-fitting lid or foil and bake at 350° for 25 to 30 minutes (30 to 40 minutes for parboiled rice; 1 hour for brown rice).

STEAMER METHOD

Use boiling liquid. Place ingredients in steamer pan(s) or steam table pan(s); stir. Place uncovered pan(s) in steamer and cook according to manufacturer's directions. *Or,* using 5 to 10 pounds pressure, cook 10 to 15 minutes (15 to 20 minutes for parboiled rice or brown rice).

To hold rice for short periods (up to 1 hour), turn it immediately into shallow pan(s), cover, and keep warm. One-half cup melted butter or margarine or oil stirred into each gallon of cooked rice will help keep the grains separate.

Special formula for extended holding and transporting: use *only* 1-3/4 measures of liquid to 1 measure of uncooked rice. Cook, covered, for 20 minutes for *all* methods. For oven method, use a temperature of 450° to 500°. Hold, covered, for at least 1 hour, at 140° to 160°. It may be held up to 4 hours. This formula applies to parboiled and regular-milled white long grain rice. For regular-milled white medium grain rice use only 1-1/2 measures of liquid to 1 measure of uncooked rice.

To refrigerate rice, cover. To reheat, add one-half cup liquid per quart of cooked rice.

SMART SHOPPERS TIP

PASTA or "MACARONI FOODS"

PASTA AND "MACARONI FOOD" PRODUCTS ARE GENERAL TERMS DESCRIBING MACARONI, SPAGHETTI, AND NOODLE PRODUCTS.

PASTA IS PRIMARILY MADE FROM A HARD WHEAT VARIETY KNOWN AS DURUM.

PASTA MADE FROM DURUM RETAINS ITS SHAPE AND FIRM TEXTURE WHILE COOKING.

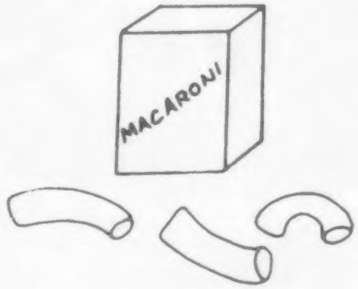
The package label will tell if the pasta is made from DURUM.

TO MAKE PASTA, WHEAT FLOUR AND WATER ARE MIXED INTO A DOUGH.

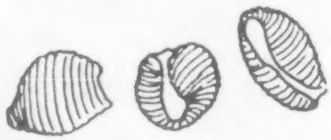
EGGS ARE ADDED WHEN

ARE MADE.

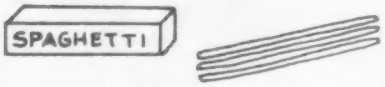
MACHINES FORM THE DOUGH INTO OVER 170 SHAPES AND SIZES.



Macaroni is usually hollow tubes. Elbow macaroni is short and curved.



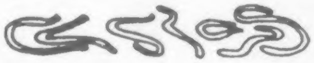
Shell macaroni is shaped like sea shells.



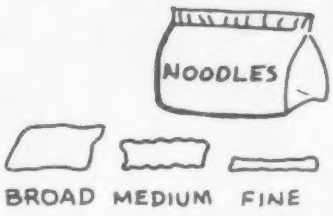
Spaghetti is long, thin, solid rods.

Spaghettini is thinner than regular spaghetti.

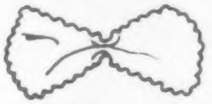
Vermicelli is the thinnest.



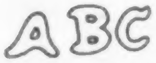
Short curved spaghetti is also available.



Noodles are flat, ribbon-like strips of varying widths.



Some noodles are shaped like bows.



Some noodles are shaped like letters of the alphabet.

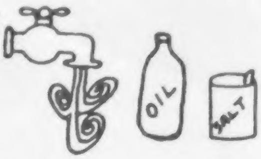
SMART SHOPPERS TIP

COOKING PASTA

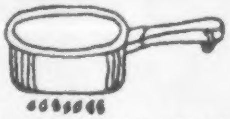
USE AMOUNTS OF INGREDIENTS RECOMMENDED ON THE PASTA PACKAGE. WITH EXPERIENCE YOU MAY FIND THAT A LITTLE LESS WATER (AND SALT) IS NEEDED FOR SMALLER PIECES OF PASTA.

WHAT TO DO

COMBINE IN DEEP SAUCEPAN WATER, SALT, AND OIL.



BRING WATER TO A FULL, ROLLING BOIL.



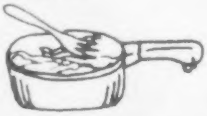
ADD PASTA GRADUALLY TO RAPIDLY BOILING WATER SO THAT BOILING DOES NOT STOP.

LEAVE PAN UNCOVERED.

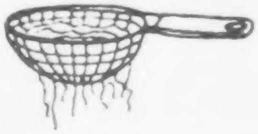
STIR OCCASIONALLY.

COOK PASTA UNTIL TENDER; YET FIRM. CONSULT DIRECTIONS ON PACKAGE FOR COOKING TIME.

TO TEST FOR DONENESS, PRESS A PIECE OF THE PASTA WITH A FORK OR SPOON AGAINST THE SIDE OF THE PAN. PASTA SHOULD BREAK EASILY AND CLEANLY WHEN DONE.



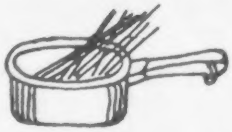
DRAIN PASTA AT ONCE IN A COLANDER OR STRAINER. DO NOT RINSE PASTA AFTER COOKING.

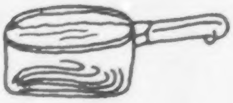


TIMELY TIPS

OIL HELPS KEEP PASTA FROM STICKING AND FROM FOAMING.

TO FIT LONG SPAGHETTI INTO A MEDIUM-SIZE PAN, PLACE ONE END OF THE SPAGHETTI STRANDS IN THE BOILING WATER. AS THE SPAGHETTI SOFTENS, GRADUALLY COIL THE STRANDS AROUND THE PAN UNTIL THEY ARE COMPLETELY UNDER THE WATER.

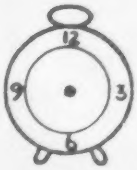




STIR TO BE SURE QUICK WETTING OF ALL SURFACES TAKES PLACE, AND TO KEEP PASTA FROM STICKING TO PAN.

IT IS THE FREE CIRCULATION OF THE PASTA IN THE WATER WHICH PREVENTS STICKING TOGETHER AND PROMOTES UNIFORM COOKING.

BE CAREFUL NOT TO OVERCOOK PASTA; OVERCOOKING MAKES IT SOFT AND UNAPPETIZING.



COOK PASTA TWO-THIRDS THE NORMAL COOKING TIME IF IT IS TO BE USED IN A COMBINATION DISH THAT NEEDS FURTHER COOKING.

IF COOKED PASTA TENDS TO STICK TOGETHER, ADD A SAUCE OR A LITTLE FAT OR OIL.

PASTA IS BEST, OF COURSE, WHEN COOKED JUST BEFORE IT IS TO BE SERVED OR COMBINED WITH OTHER INGREDIENTS. BUT, IF IT MUST BE COOKED AHEAD OF TIME, KEEP IT HOT IN A STRAINER OVER HOT WATER. THE STEAM WILL REDUCE STICKING.

3:4

SUCCESS INDICATOR – MAIN DISH SCORE CARD

Score your main dish perfect (16) if they have all the qualities listed above each section in this chart. If less than perfect, check it accordingly: GOOD, FAIR, or POOR.

APPEARANCE SCORE:
Looks appealing on the serving line, appropriate color, easily served, attractive portion when served.

PERFECT 4
GOOD 3
FAIR 2
POOR 1

POOR CHARACTERISTICS:
Color is not appealing
Difficult to serve
Sloppy portion when served

HERE'S WHY:
Over or under cooked
Unsatisfactory consistency
Carelessly served

FLAVOR AND AROMA SCORE:
Tempting aroma, pleasing flavor, well seasoned.

PERFECT 4
GOOD 3
FAIR 2
POOR 1

POOR CHARACTERISTICS:
Bland or flavorless
Too salty or spicy

HERE'S WHY:
Insufficient seasoning
Too much seasoning

TEXTURE SCORE:
Appropriate texture, (i.e. crisp, tender).

PERFECT 4
GOOD 3
FAIR 2
POOR 1

POOR CHARACTERISTICS:
Tough
Soggy
Hard, Dry

HERE'S WHY:
Length of holding time too long

Overcooked

CUSTOMER APPEAL SCORE:
Well accepted by customers

PERFECT 4
GOOD 3
FAIR 2
POOR 1

CHARACTERISTICS OF HIGH QUALITY ALIMENTARY PASTES (PASTA)

Appearance: Distinct strands or pieces.
Tenderness: Tender; little resistance to bite.
Flavor: Bland; noodles may have a slight egg flavor.

CHARACTERISTICS OF HIGH QUALITY COOKED RICE

Appearance: Grains intact; white, translucent.
Texture: Grains firm, but tender; fluffy.
Flavor: Bland.

FOOD SERVICE EMPLOYEE SHORT COURSE

Module 4: Protein Potpourri

Lesson 4: Beans, other legumes, nuts and textured vegetable protein

I. Instructor preparation for class activities

A. Assemble equipment
  1. Filmstrip projector and casset tape player
  2. Vegetarianism in a Nutshell. Available from the Polished Apple.

B. Have ingredients available to prepare recipes included in this lesson.

C. Duplicate sufficient copies of handouts
  1. Combining foods to increase protein quality
  2. Dried beans
  3. Recipes
  4. Recipes
  5. Textured Vegetable Protein
  6. How to clean ranges
  7. Recipes
  8. Score card for legume products.

II. References:

FOOD, Home and Garden Bulletin number 228, Prepared by Science and Education Administration, U.S. Department of Agriculture. 1979.

Lappe, Frances Moor, Diet for a Small Planet, Revised edition, Ramdom House, 1975.

Longacre, Doris Janzen , More With Less Cookbook, Herald Press, 1976

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 4 Beans and Other Legumes, Nuts and Textured Vegetable Protein

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. U.S. Dietary Guidelines	
A. Reduce saturated fat, eat less fatty meat, increase complex carbohydrates and fiber	
B. Recommended Dietary Allowances for protein, revised	
II. Combining foods to increase protein quality	Discuss Handout 1: Combining Foods to Increase Protein Quality
A. Milk and grains combined form a complete protein	Participants discuss popular foods illustrating these combinations
B. Legumes and grains combined form a complete protein	
C. Ethnic foods using the above combinations	
III. Beans	Show filmstrip "Vegetarianism in a Nutshell", The Polished Apple, 84 frames, 14 minutes
A. Types 1. Red 2. Kidney 3. Lima 4. Navy 5. Black 6. Pinto 7. Soy 8. Garbanzo 9. Etc.	See Handout 2: Dried Beans
B. Versatile food item 1. Soup 2. Salad 3. Main dish 4. Potato substitute	List examples of beans used in these forms
C. Preparation techniques 1. Finished product should be tender and of good texture 2. Boil for two minutes, then let them soak for one hour (This takes the place of soaking overnight) 3. Continue cooking in soaking water	See page 500: Food for Fifty See Handout 3: Recipes Prepare: Red Beans and Rice Sweet and Sour Beans Cuban Black Beans

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson Beans and Other Legumes,
Nuts and Textured Vegetable Proteins

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
D. Nutrient content 1. Good sources of protein quantity and quality, thiamine, niacin and iron 2. ½ cup may replace one ounce cooked lean meat	
IV. Dried Peas	List examples of recipes using dried peas Prepare Split Pea Soup, page 485: Food for Fifty
A. Types 1. Yellow 2. Green	
B. Forms 1. Whole 2. Split	
C. Storage	
D. Preparation-- Boil 2 minutes and let set 30 minutes (This takes the place of soaking overnight). Pease should be cooked slowly in small batches to retsin their shape and to avoid mashing	
E. Nutrient content	
V. Lentils	Prepare Lentil Vegetable Soup; recipe on Handout 4: Recipes
A. National origin--among most ancient of foods	
B. Nutrient contributions 1. Vegetable protein 2. Vitamin A 3. Vitamin B 4. Calcium	
C. Easy to prepare, no soaking, become tender in about ½ hour	
D. Available year-round as red, brown, yellow or green	
E. Different types may be used interchangeably	

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 6: Beans and Other Legumes, Nuts and Textured Vegetable Proteins

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VI. Nuts A. Peanut butter 1. Must contain a minimum of 90% peanuts 2. Good source of protein 3. Good source of niacin 4. 2 tablespoons may replace 1 ounce cooked lean meat B. Other nuts used as protein source	Prepare Vegetable Nut Loaf with Onion Sauce, Handout 7: Recipes Peanut butter should be removed from the refrigerator the day before it is to be used, so that it will have sufficient time to come to room temperature
VII. Textured vegetable protein (made from soybeans) See Handout 5: Textured Vegetable Protein	Study recipes using ground meat combined with textured vegetable protein. Class discussion on experiences using textured vegetable protein
VIII. How to clean ranges	Discuss Handout 6: How to Clean Ranges and demonstrate cleaning range
IX. Evaluation of product	Handout 8: Scorecard for Legume Products
X. Plan items to be prepared in the following class Adjust recipes Plan market order	

Excerpted from: More-With-Less Cookbook, Doris Janzen Longacre, Herald Press, 1976.

COMBINING FOODS TO INCREASE PROTEIN QUALITY

We hear it said that the quality of protein in meat is higher than in vegetable sources, or that meat contains complete protein whereas plants do not. What is meant by these terms?

Twenty amino acids make up the proteins our bodies use. Of these twenty, eight must come directly from the food we eat. These eight are called the essential amino acids. The rest our bodies can synthesize.

All the essential amino acids must be present simultaneously and in proper proportions for our bodies to utilize them. If one is lacking, even temporarily, the body's ability to use protein will fall accordingly.

Complete protein foods contain all eight essential amino acids. Animal products--eggs, milk, and meat--provide all eight amino acids in the proportions our bodies require. Eggs most nearly match the ideal pattern. Milk is a close second, and meats follow. Soybeans and whole rice come close to meats in protein quality. Other grains, the legumes, seeds, and nuts are also good sources of protein but each lacks one or more of the essential amino acids.

The amino acid deficiency in plant proteins does not mean that we must rely on animal products only for a complete protein supply. The amino acids lacking in one plant source can be made up in another. Plant proteins complement each other.

But how do we know what complements what? Actually the relationships are not hard to remember. Food habits from all over the world reflect an intuitive skill in combining complementary amino acids.

Eating a mixture of protein sources can increase the protein value of the meal; here's a case where the whole is greater than the sum of its parts.... Such mixes do not result in a perfect protein that is fully utilizable by the body (remember that only egg is near perfect). But combinations can increase the protein quality as much as fifty percent above the average of the items eaten separately.

Some of our most common are cereal with milk, cheese sandwiches, and bread with milk. These are typical of a European background where grains and dairy products make up an important part of the diet. Other parts of the world have prepared nutritious combinations for centuries. Latin Americans eat rice with beans or beans with corn. In India a pea or lentil puree (dhal) is eaten over rice. In Indonesia fermented soybean cakes (tempe) go with the rice meal. A mung bean-rice cereal is a popular Vietnamese breakfast. The Chinese and Japanese use bean noodles, bean curd, and bean sprouts with rice. Rice-lentil mixtures complemented by yogurt are common in the Middle East. Cornmeal mush eaten with beans is a staple in many African countries. We can keep using our own well-known cereal-milk combination and borrow from other traditions for a more interesting and responsible diet.

Complementary foods, to provide maximum usable protein, must be eaten together at the same meal.

MILK PRODUCTS SHOULD ALWAYS BE SERVED WITH GRAINS

- cereal with milk
- bread and milk
- cheese sandwiches
- macaroni with cheese
- rice-cheese casserole
- lasagne (pasta and cheese)
- pizza (crust and cheese)
- cheese fondue
- granola or grape nuts made with milk
- baked goods containing milk
- rice pudding (rice and milk)

LEGUMES SHOULD ALWAYS BE SERVED WITH GRAINS

- peanut-butter sandwiches
- soybean salad with bread
- bread containing soy flour
- lentil soup and muffins
- lentils or split peas (dhal) with rice
- rice-bean casserole
- Boston baked beans with brown bread
- beans and tortillas
- refried beans and rice
- beans and corn bread
- bean soup and bread

Reproduced from: Betty Crocker's International Cookbook, Random House, New York, 1980, pp. 192, 196-199.

Dried Beans

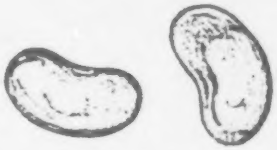
Did You Know?

Dried beans, nutrient-packed basic foods in many countries of the world, can be smoky black, red, pink, tan, white or speckled, with sizes that vary from the large oval of limas to the small round of navy or pea beans. If you can't find the kind of dried bean called for in the recipe, use another variety; they are interchangeable.

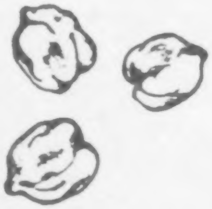
All dried beans—and dried peas, too—are high in vegetable protein; combine them with meats and dairy foods for optimum use of the protein in each food. To prevent foaming during the first cooking, add a tablespoon of margarine to the beans,

You can expect the beans to double or triple in volume as they cook.

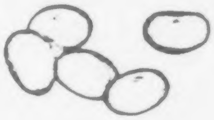
Bean Chart



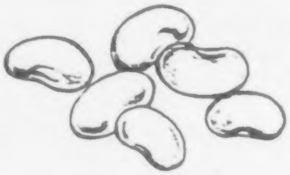
Kidney Beans



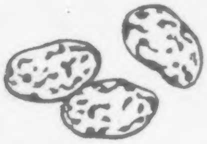
Garbanzo Beans



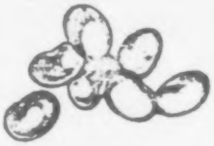
Navy or Pea Beans



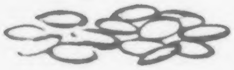
Great Northern Beans



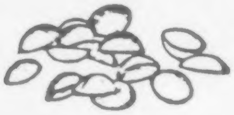
Pinto Beans



Black Beans



Lentils



Split Peas

RECIPES

SWEET AND SOUR BEANS

--Helen Brown, Wichita Home Economics teacher

8 slices bacon--fried crisp, drained, crumbled and set aside
4 medium onions sauteed in bacon grease
Combine onions with:
1 cup brown sugar
½ cup vinegar
1 teaspoon salt
½ teaspoon garlic powder or 2 cloves fresh garlic
Cook above for a sauce, 20 minutes, covered.
Add: 1-15 oz. can each of the following:
garbanzos, drained
butter beans, drained
baby limas, drained
red kidney beans drained and rinsed
pork and beans, not drained
Combine with sauce and crumbled bacon and bake 1 hr., 350° F.

Note: (Another can of butter beans may be substituted for garbanzos.)

How to Grow Your Own Bean Sprouts

Did You Know?

It's easy to sprout mung beans in your kitchen. Fold a piece of terry toweling or cheesecloth (about 16 x 8 inches) into fourths (8 x 4 inches). Place in loaf pan, 9½ x 5 x 3 inches. Pour water over the toweling until it is saturated, then sprinkle ¼ cup dried green mung beans on top in a single layer. Cover with aluminum foil; let stand 24 hours.

Uncover the planter and set it in a dark, draft-free place. Water it each day as the top layer dries out. Beans will sprout in two or three days, and will be ready to harvest in four to six days.

To harvest, snip the plants off at the base with scissors. Rinse to remove the husks and dry well. Place in a plastic bag; close tightly and refrigerate no longer than three days. The yield from ¼ cup dried mung beans is three cups.

RED BEANS AND RICE

6 servings, about ½ cup each

Calories per serving:
About 165.

Onion, chopped	½ cup
Celery, chopped	½ cup
Garlic	1 clove
Butter or margarine	2 tablespoons
Kidney beans	16-ounce can
Cooked rice	2 cups
Parsley, chopped	1 tablespoon
Salt	¼ teaspoon
Pepper	1/8 teaspoon

1. Cook onion, celery, and garlic in fat until tender. Remove garlic.
2. Add remaining ingredients.
3. Simmer together for 5 minutes to blend flavors.

LENTIL VEGETABLE SOUP

1 lb. lentils
1 cup chopped onion
2 cups chopped celery
2 cups sliced carrots
3 T freeze-dried parsley
1 clove garlic, minced
1 T salt
¼ t pepper
1 t oregano (dried, crushed)
1 lb. can tomatoes
2 T wine vinegar

Rinse lentils and place in soup kettle. Add 8 cups cold water and remaining ingredients except tomatoes and vinegar. Cover and simmer ½ hour . Add tomatoes (break up large pieces) and vinegar. Simmer, covered, 30 minutes longer. Add additional seasoning if desired. Makes 10-12 servings.

Sheila Cochran, R.D.

Red Beans and Rice

This robust and colorful dish can be the answer to your party-planning questions when you expect a crowd. The dish is served throughout Latin America.

12 servings

2	cups water
8	ounces dried kidney beans* (about 1 cup)
2	ounces salt pork, diced, or 3 slices bacon, cut up
1	medium onion, chopped
1	medium green pepper, chopped
1	cup uncooked regular rice
1½	teaspoons salt

Heat water and beans to boiling in 3-quart saucepan; boil 2 minutes. Remove from heat; cover and let stand 1 hour. Add enough water to cover beans if necessary. Heat to boiling; reduce heat. Cover and simmer until tender, 1 to 1½ hours (do not boil or beans will burst). Drain; reserve liquid.

Fry salt pork in 10-inch skillet until crisp; add onion and green pepper. Cook and stir until onion is tender. Add enough water to reserved liquid to measure 2 cups if necessary. Add reserved liquid, the salt pork, onion, green pepper, rice and salt to beans in 3-quart saucepan. Heat to boiling, stirring once or twice; reduce heat. Cover and simmer 14 minutes. (Do not lift cover or stir.) Remove from heat. Fluff lightly with fork; cover and let steam 5 to 10 minutes.

* 1 can (16 ounces) red kidney beans, drained, can be substituted for the cooked dried kidney beans.

Cuban Black Beans

Braised black beans are a staple food in the country cooking of Cuba and other islands of the Caribbean. Often they are served over rice and accompanied by a tossed green salad for a simple meatless main dish.

4 servings

2	cups water
6	ounces black beans (about 1 cup)
1	small green pepper, chopped
1	small onion, sliced
1	clove garlic, finely chopped
1	tablespoon olive or vegetable oil
1	bay leaf
¾	teaspoon crushed dried oregano leaves
½	teaspoon ground cumin
½	teaspoon salt
	Dash of pepper
2	cups hot cooked rice (page 253)

Heat water and beans to boiling in 3-quart saucepan; boil 2 minutes. Remove from heat; cover and let stand 1 hour.

Cook and stir green pepper, onion and garlic in oil until onion is tender; stir into beans. Add enough water to cover beans if necessary. Heat to boiling; reduce heat. Stir in bay leaf, oregano, cumin, salt and pepper. Cover and simmer until beans are tender and most of the liquid is absorbed, 1½ to 2 hours. Remove bay leaf. Serve over rice.

VI. Textured Vegetable Protein

A. Food products made with textured vegetable protein may be used to fulfill part of the meat requirements for Type A school lunch.

B. Textured vegetable protein is made from soybeans, cereal flours and other plant proteins.

C. Textured vegetable protein can be purchased dry or frozen.

D. Options are flavoring and coloring.

   1. The USDA Quantity Recipes for Type A Lunches have been standardized using the unflavored product, since flavors vary from one processor to another.

   2. The USDA Quantity Recipes for Type A Lunches have been standardized using the colored product, since it is less apparent in the prepared foods.

E. To be served in school foodservice, textured vegetable protein must meet certain conditions.

   1. The textured vegetable protein must meet specifications listed in USDA, FNS Notice 219-1.

   2. The hydrated textured vegetable protein must be served in combination with red meat, poultry or fish.

   3. The meats used shall be ground, and the combination shall be served as meat patties, meat loaves, meat sauce, chili, lasagne, pizza or similar products.

   4. The hydrated textured vegetable protein will have a moisture content of 60 to 65 percent.

   5. The hydrated vegetable protein will replace no more than 30 percent of the meat.

F. Textured vegetable protein is generally easy to use.

   1. Add water to hydrate.

   2. Blend with other foods.

How to Clean Ranges

When	How	Use
GRILL PLATES After each use	1. Allow plate to cool	
	2. Scrape grill to loosen burned-on particles	Heavy turner or putty knife
	3. Remove loose particles	Cloth, dust pan
	4. Scrub grill plate	Hot machine detergent solution, gong brush
	5. Scrub grease trough	Same as above
	6. Scrub back apron	Same as above
	7. Remove, dump, and wash grease trap	Same as above
	8. Rinse and wipe dry	Clean hot water Clean dry cloth
OPEN TOP Daily	1. Allow range to cool	
	2. Lift out burner grids, take to sink and scrub	Hot machine detergent solution, gong brush Wire brush
	3. Rinse, wipe dry	Clean hot water, clean dry cloth
	4. Brush burners, light burners to check for clogged burners	Wire brush, ice pick
	5. Clean back apron and warming oven	Hot machine detergent clean damp cloth
	6. Remove grease and/or warming trays below burners; take to sink and scrub	Same as above
	7. Rinse and wipe dry	Clean hot water, clean dry cloth
	8. Replace clean grids and trays	
SOLID TOP Daily	1. Allow range to cool	
	2. Loosen all burned-on particles	Putty knife, dust pan
	3. Scrub top of range (keep water to minimum)	Hot machine detergent solution, gong brush, clean damp cloth
	4. Clean back apron and warming oven	Same as above
	5. Rinse and wipe dry	Clean hot water, clean dry cloth
	6. Apply rust preventative to solid tops	Salad oil or clean shortening

Reproduced from: FOOD, A Publication on Food and Nutrition by U.S. Department of Agriculture, Home and Garden Bulletin Number 228, October, 1979, page 60

RECIPES

VEGETABLE-NUT LOAF

6 servings, about 2½ by 4 inches each

Calories per serving: About 450 with walnuts and 445 with pecans (not including sauce).

Wheat germ, unsweetened	**To coat pan**
Carrots, chopped	**1 cup**
Celery, chopped	**1 cup**
Onion, chopped	**½ cup**
Butter or margarine	**¼ cup**
Flour	**¼ cup**
Salt	**1 teaspoon**
Pepper	**⅛ teaspoon**
Thyme, if desired	**¼ teaspoon**
Milk	**1½ cups**
Natural Cheddar cheese, shredded	**1 cup**
Walnuts or pecans, chopped	**1 cup**
Wheat germ, unsweetened	**¾ cup**
Eggs, slightly beaten	**3**
Onion sauce	**As desired**

1. *Preheat oven to 350°F (moderate).*
2. *Grease 8- by 8- by 2-inch baking pan.* Coat with wheat germ.
3. Cook vegetables in fat until onion is tender.
4. Stir in flour, salt, pepper, and thyme (if used). Stir in milk. Cook and stir over moderate heat until thick.
5. Stir in cheese, nuts, and ¾ cup wheat germ. Add eggs.
6. Pour into baking pan.
7. Bake about 40 minutes or until well browned and firm.
8. Let stand a few minutes; cut into serving-size pieces. Serve with sauce.

ONION SAUCE FOR VEGETABLE-NUT LOAF

1½ cups

Calories per ¼ cup: About 55.

Butter or margarine	**2 tablespoons**
Onion, finely chopped	**2 tablespoons**
Flour	**¼ cup**
Water or potato cooking liquid (See Note)	**1½ cups**
Soy sauce	**2 teaspoons**
Salt	**½ teaspoon**
Pepper	**Few grains**

1. Melt fat in small pan over moderate heat. Cook onion until lightly browned.
2. Stir in flour.
3. Remove from heat.
4. Stir in rest of ingredients. Cook and stir until thickened. Thin with a little water if needed.

NOTE: Broth from other cooked vegetables may be included.

SCORECARD FOR LEGUME PRODUCTS

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability

Characteristics of High Quality Dried Legume Products:

Appearance: Beans or lentils retain shape. Liquid well absorbed by legumes (unless a stew or soup product).
Texture: Dried legumes (except soybeans) are mealy.
Tenderness: Little resistance to bite.
Flavor: Distinctive for variety or type of legume; seasonings well blended.

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 5: Cheese, Eggs and Milk Module IV: Protein Potpourri

I. Instructor preparation for class activities

   A. Obtain samples of various cheeses for examination and tasting by students in addition to ones used in recipes prepared in class

   B. Obtain at least 3 sizes of fresh eggs plus samples of frozen and dried eggs

   C. Duplicate sufficient copies of handouts
      1. Scorecard for Cheese and Egg Cookery

II. USDA Bulletins providing more information for this lesson: #193, 128, 129, 0-244-165, 0-452-111, 144, 103, L-315, L-244, L-465

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Cheese A. Definition by Food and Drug Administration: "A product made from the curd obtained from whole, partly skimmed, or skimmed milk of cows, or from milk obtained from other animals with or without added cream, by coagulating with rennet, lactic acid, or other suitable enzyme or acid with or without further treatment of the separated curd by that or pressure or by means of ripening ferments, special mold or seasonings."	
B. Kinds 1. Cured or Ripened a. Ripening is the change in physical properties, such as aroma, texture and composition b. Cheddar cheese, often called American cheese, is ripened by bacteria. The longer the curing period, the sharper, rich and fuller the flavor c. Green cheese is unripened cheese and is tough and leathery. During ripening, the protein breaks down and causes cheese to become soft and mellow d. Process cheese is a blend of several natural cheese and pasteurized with the aid of heat and an emulsifying agent. There is no waste in process cheese, because there is no rind. 2. Unripened a. Cottage cheese is made from the curds of pasteurized skim milk b. Cream cheese is made from cream or a mixture of cream and milk c. Neufchatel cheese resembles cream cheese, but contains more protein and less fat	Provide a variety of cheese for participants to taste and discuss their uses See pages 195-196: Food for Fifty
C. Varieties 1. Cheese is an ancient method of preserving milk 2. Many cheeses were named for the town in which they were made 3. In the U.S. most common are cottage and American	See Guide to Natural Cheeses, pages 196-197: Food for Fifty

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
D. Storage	
E. Nutrients 1. Cheese is in the dairy group of the Basic Four Food Groups and does not contain as much iron as meat and eggs 2. As a form of milk, may be combined with grains to form a complete protein 3. Milk and cheese also improve the protein in potatoes, beans, rice and corn	Review Lesson 4: Beans, Other Legumes, Nuts and Textured Vegetable Protein Discuss popular Mexican foods using these combinations
F. Menus 1. Cheese may be used in main dishes, salads and salad dressings, soups, sauces, sandwiches, desserts or as snacks, appetizers and garnishes	Write a menu using cheese as a main dish Add cheese recipes to students file
G. Principles of Cookery 1. Cheese melts at 325° F., so bake at no higher than 350° F., preferably with an insulating layer of buttered crumbs on top of cheese 2. All cheese dishes should be cooked at low temperatures and not held for long periods a. Add grated cheese to white sauce after starch is thoroughly cooked b. Process cheese combines readily because of added moisture and emulsification of fat	See Milk Cookery, page 200: Food for Fifty Demonstrate effect of overcooking cheese: Prepare 2 identical samples of a slice of cheddar cheese ¼ inch thick on a slice of toast. Bake 1 slice at 300° F. for 5 minutes. Bake the other slice at 500° F. for 5 minutes. Taste each portion and compare flavor, tenderness, stringiness and fat separation. Students choose cheese items from recipes for cheese, eggs and milk, pages 201-217: Food for Fifty. Examples: Cheese souffles: page 205 Quiche: page 217 Macaroni and cheese: page 204 Corn Rarebit: page 206
H. Characteristics of high quality products	Students and instructor compile a list and record at bottom of Handout 1: Scorecard for Cheese and Egg Cookery

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson [illegible] Cheese, Eggs and Milk Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
II. Eggs	
A. Description	
1. Composed of a living center surrounded by large amounts of food substances, the whole protected by several membranes	
2. The chief parts are the yolk, the albumen (white) and the shell and shell membranes	
B. Functions	See pages 198-199: Food for Fifty Discuss functions of eggs in food production
1. Thickening agent--as in custards and sauces	
2. Emulsifying Agent--such as mayonnaise	
3. Binder--in meatloaf or dip before breading meats	
4. Leavening agent--in cream puffs and cakes	
5. Add structure--angel food cake, meringue, souffle and omelet	
6. As a main dish--creamed egg on toast	Collect recipes using eggs as a main dish
7. Garnish	
9. Clarify broth or boiled coffee	
C. Quality characteristics--Eggs are highly perishable	
1. Age--size of air cell is smaller in a fresh egg--Quality affected more by the way they are handled than by age	
2. Store in refrigerator--deterioration is rapid at room temperature	
3. Store in original carton away from strong odors with large end up	
4. Methods of preservation	
a. Cold storage: High quality fresh eggs kept in cold storage with a relative humidity of 85-90% and may be kept as long as six months	
b. Freezer: frozen eggs are available as whole eggs, yolks, whites and blends	
c. Dried: dried eggs are available as whole egg solids, egg-white solids or egg yolk solids	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
5. Grades: AA, A and B a. Using good quality eggs is a precaution taken in an effort to prevent salmonellosis - a major foodborne, severe digestive illness b. In institutions eggs must be cooked or pasteurized. Raw eggs may not be served	Discuss availability and uses for various grades and sizes of eggs
6. Sizes--by weight, in 3 oz. increments a. Jumbo--30 oz. per dozen b. Extra large--27 oz. per dozen c. Large--24 oz. per dozen d. Medium--21 oz. per dozen e. Small--18 oz. per dozen f. Peewee--15 oz. per dozen 7. Price of eggs is determined also by availability of certain sizes	Discuss cost per pound of eggs compared to cost per pound of meat Discuss uses for various size eggs Crack six large eggs into measuring cup and six small eggs into another cup. Compare volume and/or weight
D. Nutrients 1. Eggs are an excellent source of protein, vitamins A and D, iron and riboflavin and are easily digested. Egg yolk also contains fat and cholesterol 2. One large egg may replace one ounce cooked lean meat 3. Eggs are a complete protein and can be used as a meat substitute, as well as an extender of other protein foods	Examine chalaza in a fresh egg. Demonstrate how beating breaks up chalazae
E. Forms 1. Fresh 2. Frozen--whites, yolks and whole 3. Dried	See Processed Eggs, page 199: Food for Fifty Discuss uses for various forms Calculate amount of dried and/or frozen eggs to use in a recipe calling for fresh eggs, using Table 2.3 "Equivalents of Shell Eggs and Egg Products," page 199: Food for Fifty
F. Cooking Methods 1. Low temperature and quick cooling are main principles 2. Should be brought to room temperature before using	Demonstrate difference between "hard-boiling" and "hard-cooking" (simmering) an egg. Compare tenderness

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
3. If hard-cooked in shell, drain, then shake pot to crack egg, cover with cold water to cool quickly and facilitate peeling from large end. If a whole egg will spin like a top, it is hard-cooked.	Demonstrate spinning a hard-cooked egg to determine whether egg is raw or cooked
4. When hard-cooking eggs in quantity for chopped eggs, break 4 dozen eggs in a greased 12" x 20" x 2" steamer pan, cover and steam or bake. Then chop. Saves time and labor Important: Eggs should be thick enough so whites come up to the level of yolks--for 1 dozen use pan 5" x 12" x 2"	See Egg recipes, page 207: Food for Fifty Prepare hard-cooked eggs in steamer or oven Steam eggs 13-15 minutes Bake approximately 30 minutes at 350° F.
5. Too high or too long of cooking results in toughening of egg white, discoloration and toughening of yolk and an unpleasant flavor	Prepare a variety of egg dishes selected by students from Food for Fifty. Examples: Egg Foo Yung: page 212 Scotch Woodcock: page 213 Chinese Omelet: page 210 Deviled Eggs: page 214 Note: Breakfast eggs and omelets are included in Module I: Breads and Breakfasts
G. Characteristics of high quality egg products	Students and instructor compile a list and record at bottom of Handout 1: Scorecard for Cheese and Egg Cookery
H. Evaluate cheese and egg products	
I. Assignment for following class Market order	

SCORECARD FOR CHEESE AND EGG COOKERY

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Tenderness	Flavor	General Acceptability

Characteristics of a High Quality Product:

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 6: Sandwiches Module IV: Protein Potpourri

I. Instructor preparation for class activities

  A. Assemble ingredients for sandwich recipes selected by students and/or instructor

  B. Assemble tools used in production
    1. Cutting board - synthetic, not wood
    2. French knife or serrated bread knife
    3. Mixing bowls
    4. Plastic gloves
    5. Sandwich bags or waxed paper for wrapping
    6. Scoops or dippers
    7. Spatula for spreading filling
    8. Spoons
    9. Storage pan or trays, foil to cover

  C. Duplicate sufficient copies of Handouts
    1. Sandwich Arrangements
    2. Scorecard for Sandwiches
    3. Evaluation of course

II. The following references provide more information on the subject of this lesson:

  A. Kotschevar, L. Standards, Principles and Techniques in Quantity Food Production, Third Edition. Boston, Massachusetts: Cahners Books, 1975. Chapter 2

  B. Modern Sandwich Methods. Chicago, Illinois: American Institute of Baking, 1964

  C. Ross, L. Work Simplification in Food Service. Ames, Iowa: The Iowa State University Press, 1972

  D. Terrell, M. Professional Food Preparation. Second Edition. New York, New York: John Wiley and Sons, Inc., 1979

Lesson 6: Sandwiches   Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Introduction	
A. Sandwiches add variety to a menu 1. Many different types of enriched or whole grain bread and rolls and sandwich fillings which fulfill the meat/meat alternate requirements may be used	See pages 442-443: Food for Fifty
2. Sandwiches may be served hot or cold; closed- or open-faced 3. Soup and sandwich or salad and sandwich meals are popular	
B. Varying the bread and rolls used will provide variety in flavor, texture, size and shape. They must be made with whole-grain or enriched meal or flour 1. Types of bread and rolls for cold, hot and tea sandwiches 2. Bread should be fine textured and tender	Have students brainstorm on types of bread and rolls including ethnic varieties
3. Store at room temperature to delay staling or freeze for up to two months 4. Size and shape a. Pullman--4½" square slice, with fine texture and firm, tough crust b. Spring top loaf--larger slice with rounded top, open texture, tender crust	Examine a variety of bread, checking weight of loaf, number of slices per loaf, texture, crust, etc.
C. Other ingredients 1. Spread, such as butter, margarine or mayonnaise, adds flavor and prevents main filling from soaking bread 2. Fillings provide variety in flavor and texture a. List sliced cold or hot meats b. List sliced cold or hot cheeses c. List salad-types d. List cold or hot fish e. List cold or hot eggs	Discuss operation of slicer, adjusting thickness of slice Discuss proper storage of sandwich fillings See recipes for sandwiches, pages 446-457: Food for Fifty
D. Portioning and Serving 1. Determining portions 2. Tools for portioning 3. Cutting and serving 4. Garnishes 5. Accompaniments	Discuss portion sizes of commercial sandwiches as well as sandwiches for institutional use Handout 1: Sandwich Arrangements See garnishes, pages 590-591: Food for Fifty

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 6 Sandwiches

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
II. Types	Students list examples of various types
A. Closed 1. Hot 2. Cold	See page 443: Food for Fifty
B. Grilled, toasted and deep fat fried	Discuss examples of grilled, toasted and deep fat fried sandwiches
C. Open-faced 1. Hot 2. Cold	
D. Tea 1. Open 2. Ribbon 3. Checkerboard 4. Rolled	See pages 444-445: Food for Fifty
E. Miscellaneous	Show "Fast Sandwich Making" or "Modern Sandwich Methods" and discuss the film content
III. Assembling the sandwich using principles of time and motion economy	Arrange equipment and materials for 2-handed activity within easy reach Instructor will demonstrate smooth work flow, using simplified motions
A. Using both hands (gloved), grasp the loaf of bread and drop slices in four rows of five each, starting in upper left hand corner and working toward the right and toward you	
B. With narrow spatula in right hand, spread butter to edges of bread with one sweeping motion. With left hand, scoop a portion of sandwich filling into center of each slice (#24 or #20 dipper is common size)	
C. With right hand use a stroke of the spatula away from you and a stroke towards you to spread filling evenly to edge of bread. With left hand place lettuce on filling	Instructor with one or two students demonstrate "assembly line" method of preparing sandwiches

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
D. With both hands grasp loaf of bread and drop off two slices over each filled slice, matching edges of bread	
E. Repeat steps 2 through 4 two more times until there are sixty sandwiches in stacks of three. Stacks must be kept low so the cold air of the refrigerator can penetrate the filling	
F. Hold sandwiches together with thumb and first finger of left hand. Cut through several stacks at one time with a sawing motion using a serrated blade or with an electric knife	Demonstrate cutting from the upper left corner of the 4 x 5 arrangement to the far lower right corner
G. Place in sandwich bags or waxed paper or in pans with covers and refrigerate. Do not cover sandwiches directly with a damp towel, as the moisture in the towel may promote bacterial growth. Serve sandwiches the same day they are made	Demonstrate how to wrap sandwiches
	Students will prepare examples of various types of sandwiches using recipes from Food for Fifty Students will display sandwiches on plates with appropriate garnish Review storage temperatures
IV. Precautions for production	
A. Make sandwiches the day they are to be served	
B. Make prepared fillings only in such quantities as will be used during one serving period 1. Avoid leftovers 2. Never hold over any perishable foods or fillings that have been at room temperature for four hours or more	
C. Handle bread and fillings as little as possible during preparation 1. Avoid the use of hands in direct contact with foods if tools can do the job efficiently 2. Use tongs, scoops, forks and plastic gloves	
D. Avoid stacking sandwiches for refrigeration more than three high. Over-stacking will insulate the filling and prevent proper storage temperature	

FOOD SERVICE EMPLOYEE SHORT COURSE

Lesson 6: Sandwiches

Module IV: Protein Potpourri

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
V. Principles of work simplification to save time and motion	
A. To produce sandwiches efficiently layout is important 1. "Normal work area" a. Comfortable horizontal reach b. Comfortable vertical reach 2. Counter height - recommended working height is 36 inches a. For a short person a slotted floor board may be used b. For a tall person put an extra cutting board on the counter top 3. Comfortable well-fitted shoes and wood board or rubber mats to stand on reduce tired backs and aching feet 4. Refrigerator space for ingredients and finished sandwiches should be nearby	Students stand in front of work table and measure the work area that is "normal" for them and which does not involve excessive stretching or stoo Students determine comfortable work table height
B. Definition of Work Simplification 1. Work simplification is the process of doing a job better by incorporating ways to make the work easier, faster and less expensive 2. It allows foodservice personnel to "work smarter, not harder"	Class discussion on why work simplification is important in food service
C. Advantages of Work Simplification 1. Work simplification gives the employee more confidence; it fosters creative thinking and increases job satisfaction 2. It improves the quality of the foodservice 3. It eliminates nonessential work 4. It increases productivity 5. It saves money	Students describe examples of these advantages in their work experience
D. General Principles of Work Simplification 1. Use smooth flowing motions a. An overlapping figure-eight stroke or a circular motion requires less employee energy than stilted "back and forth" strokes b. Use such a motion when washing the work area or mopping the floor	Students and instructor demonstrate each of the principles in as many ways as possible

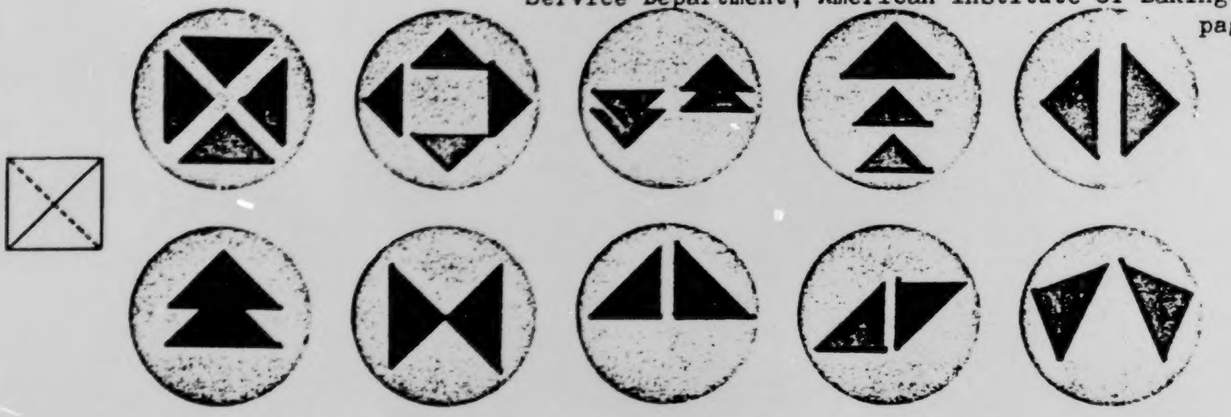
LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
2. Make both hands productive at the same time a. Hands should work together in unison, beginning and ending motions at the same time b. This can double productivity in sandwich production, as well as portioning salads, desserts, etc. 3. Make hand and body motions few, short and simple a. Each motion should make use of the least possible time and energy (1) If possible, use a hand motion instead of an arm motion (2) Use an arm motion instead of a body motion 4. Maintain comfortable positions and conditions 5. Position materials for efficient sequence of motions 6. Use best available equipment for the job 7. Locate activity in "normal work area" when possible 8. Store material in an orderly manner	
VI. Evaluation of sandwiches	Handout 2: Scorecard for Sandwiches
VII. Evaluation of course	Handout 3: Evaluation of Course

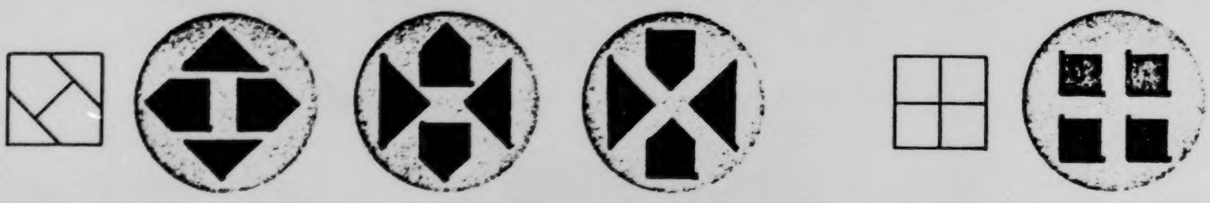
SANDWICH ARRANGEMENTS

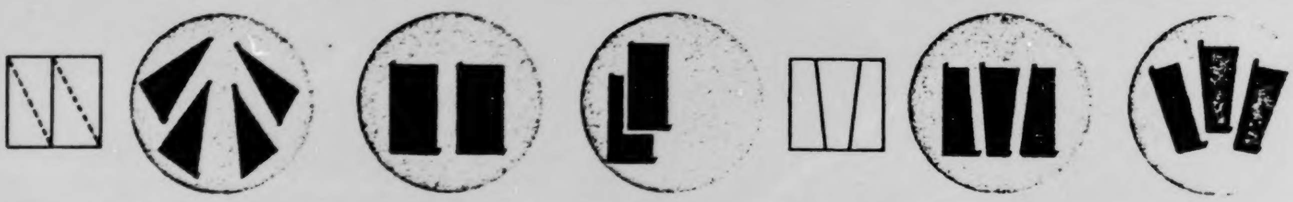
The following illustrations suggest possible sandwich arrangements from cutting cues given on preceding page. Garnishes, relishes, salad or soup accompaniments can be arranged in open spaces.

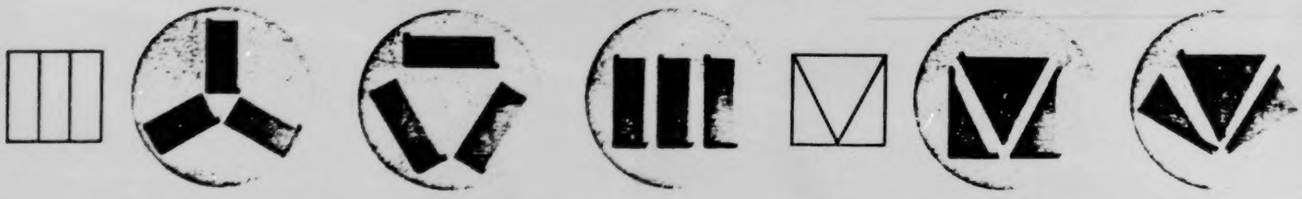
6:1

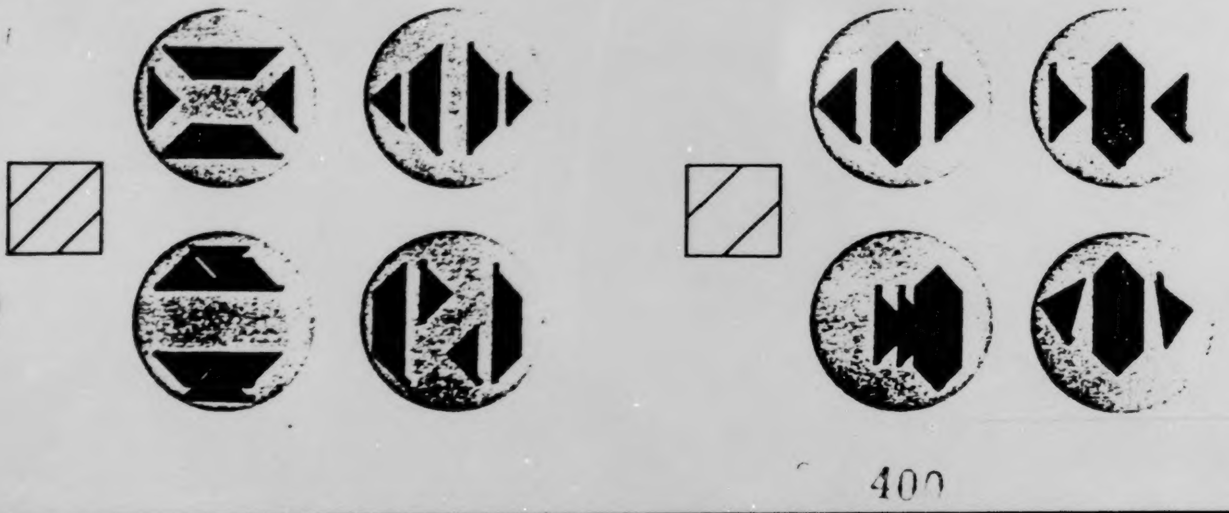
Reproduced from: "Modern Sandwich Methods" A Manual for Quantity Sandwich Production, prepared by Consumer Service Department, American Institute of Baking, 1964 page 10











SCORECARD FOR SANDWICHES

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Texture	Temperature	Flavor	General Acceptability

Characteristics of a High Quality Product:

Appearance: Neat and attractive, look "good enough to eat"
Fresh and appealing
Pieces easy to handle

Filling: Well-seasoned, flavorful
Flavors of bread and filling should harmonize
Rich enough to be satisfying
Sufficiently moist to balance normal dryness of bread
Spread to edge of bread; not project beyond it
Adequate amount of filling, but with portion control

Bread: Fine textured and reasonably tender
Firm enough to spread well
Good clear flavor of cereal from which it is made

Temperature: Hot sandwiches: above 145° F.
Cold sandwiches: below 45° F.

This is what I learned at this workshop:

This is how I'll use what I learned on my job:

Next Time, I hope you will:

(over for more space)

KANSAS DEPARTMENT OF VOCATIONAL EDUCATION

FOOD SERVICE EMPLOYEE SHORT COURSE

Module 5--Desserts: The Happy Ending

Course length--18 hours: 3 hours per session for six weeks

Starting Date--

Prerequisite--Some experience in quantity food production is desirable

Learning Strategy--Presentation of the course will be by lecture, demonstrations, actual "hands-on" class activities, and audio-visual materials. Handouts will be distributed at most sessions.

COURSE OUTLINE:

I. Lesson one: Fruits and Fruit Fillings
   1. General orientation
      a. Orientation to the facility
      b. Student Handbook
   2. Use of equipment
   3. Preparation and evaluation of fruit fillings
   4. Demonstration of serving fruit desserts attractively

II. Lesson two: Pastry
   1. Discuss types of pies
   2. Methods for mixing, scaling and rolling pastry
   3. Equipment for mixing pastry
   4. Common difficulties with pastry
   5. Preparation and evaluation of several types of pie
   6. Adjust a recipe for pastry

III. Lesson three: Puddings, Custard and Soft Meringues
   1. Principles of starch cookery--differences in thickening power
   2. Effect of over-stirring and under-cooking
   3. Function of ingr edients, starch, eggs, sugar and acid
   4. Preparation and evaluation of puddings, custards and soft meringues
   5. Portioning and garnishing puddings
   6. Nutritional contribution of these desserts

IV. Lesson four: Cookies
   1. Types of cookies: Rolled, refrigerator, pressed, sheet, drop, filled
   2. Use of standardized recipes and proper equipment
   3. Function of ingredients in cookies
   4. Preparation and evaluation of rolled, dropped, refrigerator and bar cookies
   5. Storage of cookies

V. Lesson five: Cakes

1. Classification of cakes, and their variations
2. Methods of mixing cakes
3. Scaling batter into pans
4. Types of frostings
5. Compare "box" cakes with "made from scratch"
6. Preparatinn and evaluation of a variety of cakes and cobbler cakes

VI. Lesson six--Dessert specialties

1. Discuss specialties such as crisps, Betty, cream puffs or eclairs and meringue shells
2. Nutritional contribution of these desserts
3. Preparation and evaluation of fruit crisp, fruit Betty, cream puffs and meringue shells
4. Demonstrate portioning and garnishing these desserts
5. Summary of previous lessons
6. Course evaluation

EXPECTED OUTCOME

Participants will become more aware of their valuable and vital role on the health care team by providing nutritious and appealing meals to the residents (patients) in their facilities as an aid to their well-being.

Developed cooperatively by Occupational Home Economics, Kansas Department of Vocational Education, Wichita Area Vocational-Technical School and members of the Kansas Dietetic Association.

An equal employment/educational institution.

FOOD SERVICE EMPLOYEES SHORT COURSES

Module 5--Desserts: The Happy Ending

LESSON ONE: FRUITS AND FRUIT FILLINGS

GOALS: The purpose of this lesson is to:

1. Introduce participants and faculty.
2. Acquaint the participants to the scope of this short course.
3. Introduce the participants to the physical plant of the kitchen and work area.
4. Teach the participant to use the correct procedures to measure and weigh food ingredients.
5. Have the participant gain understanding of how fruit is used as a dessert.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Demonstrate sanitary methods of cleaning work surfaces, washing and storing equipment and utensils.
2. Recognize correct weighing and measuring techniques used in quantity food preparation.
3. Demonstrate use of range top in preparation of fruit filling.
4. Name four types of fruit and give examples of how they may be served as desserts.
5. Discuss nutritional contribution of fruits in the diet.
6. List ways to prevent discoloration of fresh fruits.
7. Demonstrate the assembly and display of fruit plates and fruit desserts.
8. List characteristics of high quality fruit desserts.

LESSON TWO: PASTRY

GOAL: The purpose of this lesson is to enable the participant to develop a better understanding of the techniques involved in making high quality pastry.

BEHAVIORAL OBJECTIVES: After completion of this lesson, the student should be able to:

1. Describe qualities of good pastry.
2. List the ingredients used in pastry, their functions and proportions.
3. Describe proper methods for mixing, scaling, and rolling pastry for one crust and two crust pies.
4. Demonstrate use of dough hook and pastry cutter attachments on mixer in preparing pastries.
5. Differentiate between the conventional method and slurry method of pastry preparation.
6. Name the reasons for some common pastry difficulties.
7. List examples of fruit pies, cream pies, chiffon pies, and soft pies.
8. Describe characteristics of a good soft meringue.
9. Increase or decrease a recipe for pastry using tables in Food for Fifty.

LESSON THREE: PUDDINGS, CUSTARD AND SOFT MERINGUES

GOALS: The purpose of this lesson is to:

1. Acquaint the participant with the principles of starch cookery and the function of eggs, flour cornstarch and tapioca in puddings, custards and meringues.
2.

BEHAVIORAL OBJECTIVES: After completion of this lesson, the participant should be able to:

1. Outline the principles of starch cookery.
2. List differences between thickening power of cornstarch, waxy maize flour, tapioca and eggs.
3. Describe effects of undercooking, and over stirring in starch cookery.
4. Discuss the nutritional contribution of eggs, milk, fat, sugar and starch used in desserts.
5. List the proportions of milk, sugar and eggs in a standard baked custard.
6. Identify standards for quality puddings, custards and soft margarines.
7. Compare costs of pudding made from commercial mixes and pudding made from scratch.
8. Demonstrate use of steam-jacketed kettle, double boiler and oven in dessert preparation.

LESSON FOUR: COOKIES

GOALS: The purpose of this lesson is to allow participants to compare types of cookies and methods of preparing cookies using principles of motion economy and portion control.

BEHAVIORAL OBJECTIVES: After completion of this lesson, the participant should be able to:

1. List six types of cookies and describe how they are portioned or shaped.
2. Describe functions of ingredients in cookies.
3. Identify the probable cause for common defects in cookies and suggest ways to prevent these defects.
4. Identify standards of quality for cookies.
5. Prepare rolled, dropped, refrigerated and bar cookies and evaluate them using appropriate score cards.
6. Describe proper storage of cookies.

LESSON FIVE: CAKES

GOALS: The purpose of this lesson is to:

1. Enable the participants to become familiar with various types of cakes and to understand the techniques for preparing them.
2.

BEHAVIORAL OBJECTIVES: After completion of this lesson, the participant should be able to:

1. Name two classifications of cakes.
2. Describe the three common methods of mixing cakes. (conventional, dough-batter and muffin methods)
3. Describe how to scale cake batter into appropriate baking pans.
4. List variations of plain cake, spice cake and chocolate cake.
5. Name examples of 3 common types of frosting--(Boiled or fluffy, butter cream, and cooked--such as coconut-pecan.)
6. List ways to vary and improve cake mixes.
7. Compare cost and quality of "box" versus "made from scratch" cakes.

LESSON SIX--DESSERT SPECIALTIES

GOAL: The purpose of this lesson is to acquaint the participant with other desserts such as fruit crisps and Betty creampuffs and meringue shells.

BEHAVIORAL OBJECTIVES: After completion of this lesson the participant should be able to:

1. Describe quality characteristics of fruit crisps and Bettys and how they differ.
2. List the ingredients of cream puff shells and describe how they are prepared.
3. Name three variations of cream puffs.
4. Describe equipment used for shaping cream puffs and hard meringue shells.
5. List ways to serve meringue shells.
6. Describe a standard cream puff and a standard meringue shell.

Lesson 1: Fruits and Fruit Fillings

Module 5--Desserts: The Happy Ending

I. Instructor preparation for class activities

A. Assemble the following equipment:

clear parfait glass
pudding or fruit dishes
sherbet dishes
disposable 5 oz. glasses

weighing equipment
measuring cups and spoons
sauce pans
wire whips
6 " plate--8 or 9" plate

B. Have available the following ingredients:

meringue circles
small pastry crust
whipped topping
shortcake portion
sugar

variety of fresh fruits, greens for salad plate
canned fruits, or pictures from can labels
canned peaches or cherries
cornstarch, waxy maize, flour, minute tapioca
variety of garnishes for fruit fillings
can commercial pie filling

C. Duplicate sufficient copies of handouts for lesson:

1. Course Outline
2. Goals and Behavioral Objectives
3. Filling Preparation
4. Scorecard for fruit filling
5. Glossary--Baker

D. Assemble student handbook information in color-coded folders

II. The following references provide more information on the subject of this module:

Amendola, Joseph and Lundberg, Donald E., Understanding Baking, CBI Publishing Company, Inc., 1970.

Dennler, Louise, Food Preparation: Study Course, The Iowa State University Press, 1971.

Kotschevar, Lendal H., Ph.D., Standards, Principles, and Techniques in Quantity Food Production, 3rd Edition, Cahners Books International, Inc., 1974.

Mario, Thomas, Quantity Cooking, AVI Publishing Company, Inc., 1978.

Powers, Jo Marie, Basics of Quantity Food Production, John Wiley & Sons, 1979.

West, Bessie Brooks; Shugart, Grace Severance; Wilson, Maxine, Food For Fifty, John Wiley & Sons, 1979, 6th Ed.

FOOD SERVICE EMPLOYEES SHORT COURSES

Lesson 1: Fruits and Fruit Fillings

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. General Orientation	
A. Presentation of name tags and get-acquainted activity 1. Introduce faculty and students B. Complete enrollment procedure	Play game for introducing participants to each other: Faculty and students tell of their background in food service industry
C. Orientation to the course	
1. Purpose of the course--Introduction	Read poem about cooks
Desserts are usually sweet and are used to end a meal. They should blend with the meal and complement it. Desserts should try to end the appetite, and for this reason they are sweet and filling. They can be used to heighten meal interest and add something extra to the meal. Desserts on a menu should be selected for their flavor, richness, color, variety, texture, form, appearance, and the ability to lend themselves to quantity production. They need not be expensive and can do much to improve a meal. Fruit contributes the most nutrition and is the choice of desserts.	
a. Learn by doing, preparation and display b. Learn some scientific principle in food preparation c. Evaluate finished products using score cards	Ask students what they want to learn about fruits and desserts. As much as possible, incorporate those requests into this module
d. Importance of clean-up, sanitation and safety practices 2. Meeting place and times	Explain that other employees will be using this kitchen and expect it to be clean and orderly.
3. Certificate of completion--grade if given	
4. Overview of course D. Orientation to facility	Discuss handout "Goals and Objectives" of this module
1. Building rules and regulations 2. Location of restrooms and smoking areas	
E. Student handbook	Review handouts in student handbook
1. Dress code, personal conduct, food handling, sanitation and safety checklists	
2. Use of textbook, note taking and handouts 3. Organization of class into teams	Examine "Food for Fifty" 6th ed. Look up sections on pastry, p. 309; cakes, p. 157; cookies, p. 218; frostings, p. 178; puddings, p. 363
	Assign participants into teams, according to number in class and class activities. Use color-coded folders or colored name tags

Lesson 1: Fruits and Fruit Fillings

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
	Review "Team Duties" Outline general activity of this class period
F. Tour kitchen and work area	
1. Emphasize handwashing rules and locate handwashing sinks	Participants demonstrate proper handwashing procedures
2. Review 3-sink method of ware-washing in student handbook	Participants demonstrate filling of sinks, measuring sanitizer, etc.
3. Discuss sanitary procedures for washing, and storing equipment and utensils 1. Instructor will establish policy for returning utensils and ingredients to storage areas	Participants demonstrate method of cleaning and sanitizing work surfaces, washing and storing utensils
II. Use of equipment	
A. Demonstrate use of scales and measuring equipment in quantity food preparation	See chart on equivalent weights and measures, *Food For Fifty*
B. Demonstrate use of range top, ovens, Steam Jacket kettle, double boiler	
III. Lecture: Fruit	
A. Some types of fruit are	
1. Canned	Display examples of canned fruits if possible, or use can labels or pictures from magazines
a. Mixture such as fruit cocktail	
b. Sliced--diced, pie packed whole, halves, peeled or unpeeled	
c. Syrup, light, or heavy--waterpacked	
d. Keeping qualities of canned fruits, temperature of storeroo	
2. Dried	
a. Bananas, raisins, currents, apples, pears, prunes, apricots, pineapple, sometimes combined with nuts	Participants taste variety of dried fruits; snack mixture if possible. Discuss how they have seen dried fruit served
b. How to store, shelflife--Below 70° or refrigerated	
c. How to prepare and serve	
1. May be rehydrated and used same as canned fruits a. Soak and cook in same water--Little or no sugar is needed	
2. May be ground and made into candy ball	
3. May be stewed and served in a compote	
d. Dried fruits are expensive	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
3. Fresh a. Seasonal availability b. How to store--keeping qualities Ripen at 60-70°--Refrigerate c. Methods of preparation d. Ways to prevent discoloration (1) Dip in diluted lemon juice on cut fresh fruit such as bananas, apples, peaches, pears, nectarines (2) Dip in tart juice from canned fruit (3) Cover fresh cut fruit to exclude air and refrigerate	List fruits available locally, display some if possible
4. Frozen a. Store at -10° to 0°F. They can be kept in freezer about 1 year. Thaw in refrigerator b. Uses for frozen fruit (1) Served partially thawed (2) Used in baking	Discuss how frozen fruit is packaged, small packag or 30# cans Sugar packed with ascorbic acid Dry pack (without sugar) Individually quick frozen (IQF)
B. Place of fruit in the diet 1. Belongs to fruit-vegetable group of "Basic Four Food Groups"	
2. Appetite appeal, attractive color, refreshing flavor 3. Average portion provides few calories if served fresh and/or without sugar 4. Provides fiber, particularly those with skins and seeds 5. Provides vitamins C, A, K a. Conserve these vitamins through proper storage and preparation of fruit b. Include one serving of high vitamin C food per day c. Fruits are the principal food sources of Vitamin C	List ways these fruits can be served as desserts 1. Canned 2. Dried 3. Fresh 4. Frozen List fruits high in Vitamin C
IV. Ways to Serve Fruit A. Fruit plates--as combined salad and dessert 1. 6" salad plate or dinner plate size with protein for main dish 2. Discuss how to get pleasant arrangement of fruits and elevation i a salad plate 3. Review how to prevent enzymatic discoloration of fruits 4. Describe various greens as liners for fruit plates 5. Look up recipes for fruit salad dressings in "Food for Fifty" Note: fruit salads are included in the salads module.	Prepare a 6" salad plate of fresh fruits--select from canteloupe, watermelon, honey dew cherrie apples, oranges, grapefruit, pears, peaches and bananas on a liner of greens, with appropriate garnish and dressing

FOOD SERVICE EMP[illegible]EES SHORT COURSES

Lesson 1: Fruits and Fruit Fillings

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
	Treat fruit with acid to prevent browning. Leave one piece untreated, exposed to air 1 hour or more Demonstrate proper way to peel grapefruit on cutting board--section with table knife
B. Baked apples and/or pears C. Fruit as garnish D. Fruit filling--See table 1.18 approximate equivalent substitutions--Food for Fifty, p. 68.	
1. Fruits may be thickened with cornstarch, waxy maize, flour or tapioca See the following guides in "Food for Fifty": p. 313: Pies Made With Canned Fruit p. 314: Pies Made With Frozen Fruit p. 316: Guide for Using Frozen Fruit in Pies or Cobblers 2. Qualities of gel from the above 4 thickeners are:	Assign the following to different teams a. Prepare peach or cherry filling using cornstarch as thickener b. Prepare peach or cherry pie filling using waxy maize as a thickener c. Prepare peach or cherry filling using flour as thickener d. Prepare peach or cherry filling using tapio as a thickener e. Display commercial canned pie filling for comparison Evaluate quality of gels in the above using score cards
3. Use of commercial fruit pie fillings as desserts a. Compare cost of commercial fruit fillings with homemade, including cost of labor b. Fruit pie fillings can be served in a variety of ways. Consider texture, color and flavor c. Evaluate desserts for attractiveness and suitability	Demonstrate ways to serve homemade or commercial pie filling with garnish to make an attractive dessert, using a variety of serving dishes and garnishes.

FOOD SERVICE EMPLOYEES SHORT COURSES

Lesson 1: Fruits and Fruit Fillings

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
	Some suggested garnishes meringue circles pastry cut outs whipped topping, nuts portion of shortcake Some suggested serving dishes: parfait glasses sherbet dishes sauce dishes disposable 5 oz. glasses
VI. Assignments for next class Market order	Distribute: glossary-- Baker Also see glossary, p. 78--Food for Fifty Relative proportion of ingredients p. 70-71

Reproduced from Amendola, Joseph and Lundberg, Donald E., Understanding Baking, CBI Publishing Company, Inc., 1970, p. 78.

FILLING PREPARATION

Among the many methods used in filling pies today, the following three are the most generally accepted:

(1) Cooked Juice Method

(a) Drain juice from fruit and bring to a boil.
(b) Thicken with proper amount of dissolved cornstarch.
(c) Bring back to a boil to clarify or assure proper setting of the starch.
(d) Add granulated sugar, salt, spices, butter or other flavoring agents and stir until dissolved.
(e) Pour over drained fruit, stir carefully and do not crush the fruit.
(f) When the filling is cold it is ready for the pies.

The above method is generally used for Cherry, Apple, Blueberry, Apricot and Peach pies.

(2) Cooked Fruit and Juice Method

(a) Bring juice and fruit to a boil.
(b) Add the amount of dissolved cornstarch needed to bring juice and fruit to a proper consistency. After the cornstarch is added, always bring the filling back to a boil so that it will clarify.
(c) Add the desired amount of sugar and stir until thoroughly dissolved. Care should be taken when cooking the fruit to stir occasionally to prevent the possibility of scorching.
(d) When the filling is cold it is ready for the pies.

The above method is generally used for Raisin, Pineapple and also Apple if the latter are unusually hard.

(3) Home Made Method

(a) Mix the fruit with spices, flour and sugar.
(b) Fill the unbaked pie shells.
(c) Place a lump of butter or margarine on top of the filling.
(d) Cover the pie and bake as usual.

This method is very simple. However, the flour in the filling has a tendency to remain uncooked. Therefore, the consistency is not as easily controlled as in the preceding two methods.

SCORE CARD FOR FRUIT FILLINGS

Select and record words that best describe the products. Evaluate against characteristics of a high quality product using a 5 point scale--5=most desirable, 1=least desirable.

Product	General Appearance	Firmness of gel	Color of gel	Clarity of gel	Flavor and Mouth Feel
Pie filling: 1. Using cornstarch					
2. Using flour					
3. Using tapioca					
4. Commercial canned pie filling					

Characteristics of a high quality fruit filling:

Color--clear and bright

Gel--Transparent and shiny, not gummy or pasty

Flavor--Moderately sweet and pleasant, characteristic of the product, not flat, starchy or undercooked, spice flavor must be mild.

Appearance--Fruit pieces should appear intact; apple slices will appear moist; cherries should appear plump.

Body and Texture--Fruit pieces are tender and soft; juice has the consistency of a soft starch pudding.

BAKER

GLOSSARY

Absorb—Absorption--To absorb is to take in and hold; absorption refers to the ability of flour and other dry ingredients to take in and hold liquids.

Bake--Cook by dry heat in an oven or closed chamber that has been preheated.

Bag-out--Press out a prepared batter through a bag and tube, or a cookie press; produces a particular shape or design.

Bar Cookies--Made from dough which is spread onto a sheet, baked, cooled and cut into squares.

Batter--Mixture of flour, sugar, eggs, liquid, etc., which can be poured.

Beat or Whip--Mix air into a batter with a mixing machine at high speed or with a hand whip used rapidly.

Blend--Two or more ingredients gently folded or mixed together until smooth.

Breaking Down--Separation or collapse of products brought about by overcreaming or over-heating.

Cake Leavened--Leavened by the use of baking powder. Most popular method because of reduced preparation time. Doughnut mixes are usually of this type.

Choux--(chou) Pronounced "shoe". Basic batter used in making cream puffs and eclairs.

Coagulate--To clot or curdle.

Cream--Sugar and shortening mixed together to a smooth, creamy consistency before adding other ingredients.

Cream Puff--Choux shells dropped by a spoon onto a baking sheet, baked, split and filled with a cream or frosting mixture.

Cut In--To distribute fat into dry ingredients in small particles by using a chopping motion with a pastry blender or two knives.

Dissolve--Mix dry ingredients into a liquid by stirring until no solid matter is present.

Dough--Thick, soft uncooked mass of softened flour.

Dough Hook--Attachment used on commercial food mixer to blend shortening into dry ingredients.

Drop Cookies--Made from dough which is spooned or bagged-out onto sheets for baking.

Dust--To lightly cover a food or surface with a dry substance, e.g., flour on a pan, powdered sugar on doughnut.

Eclairs--Choux paste shaped through a pastry bag, baked, split and filled with cream or custard fillings. The tops may be dipped in melted chocolate icing or frosted.

Eggs--Provide flavor and color, act as thickeners, emulsifiers, binders or leaveners depending upon the food product.

Egg Wash--Mixture of egg and water brushed on the top of unbaked products to aid in browning.

Filled Cookies--Cookies which have a fruit or jam filled center.

Firm Dough--Dough which can be rolled out and cut into a variety of shapes.

Flaky--Made up of many very thin layers; such layers of dough are made by mixing fat and flour together to form small lumps. This is done in the preparation of pie crust dough.

Flavorings and Spices--Give special flavor, color and fragrance improving the taste of the end product. Some flavorings are vanilla, cocoa, cinnamon, nutmeg, salt, sugar.

Flour--Gives body or structure to the product. Flour in yeast-raised doughs forms gluten which is elastic and permits dough to stretch or expand with leavening. Types of flour are: bread, pastry, cake, whole wheat, rye and self-rising.

Foam Cakes--Cakes in which beaten eggs are used as the basic leavening agent and tenderizer.

Fold--To gently mix one substance into another by an overhand motion with a mixing spoon, spatula or beater. Generally, flour or beaten egg whites are folded into a batter.

Gradually--Act of proceeding by stages.

Grain--Cell structure or texture of a baked product.

Humidity--Water content of the air.

Ice or Frost--To apply a sugar preparation such as a frosting or icing to a baked product.

Icebox Cookies--Made from batter which is placed in the refrigerator to chill before being sliced and baked; richness of the dough makes this procedure necessary.

Leavening Agent--Substance which causes a product to rise during baking; e.g., baking powder, baking soda, yeast, air, steam.

Measure--To determine a specific amount of an ingredient.

Merchandising--The manner of presenting a product in order to create a greater demand for it.

Mix--To blend two or more ingredients into one uniform mass.

Moist--Not dry, containing some liquid or moisture.

Pastry--Mixture of flour, shortening, salt and water rolled flat and placed in a pie pan as a liner to hold fruit or cream fillings. The term "pie" originated in England to denote desserts with dough and fruits layered in a pan.

Pastry Blender--Device used to cut shortening into flour before adding liquid ingredients.

Pastry-making Methods--

Conventional - Shortening blended with flour and salt first then water added to form dough.

Hot Water - Shortening and hot water beaten together first then dry ingredients added to form dough.

Oil - Dough made by adding water to mixture of oil and dry ingredients.

Roll--To flatten a dough with a rolling pin.

Rolled Cookies--Made from dough rolled out and cut in various forms; this cookie lends itself to special garnishes and decorations.

Scaling--Weighing ingredients with a scale.

Scrape--To remove clinging batter or dough from the sides and bottom of a container.

Shortening--Imparts richness, flakiness, tenderness, flavor, texture, color and volume to a product and helps keep it fresh. Shortenings include compound-types which may be either animal or vegetable in nature, and all-hydrogenated vegetable oils.

Sift--To pass a dry ingredient or a mixture of dry ingredients through a sieve or sifter.

Soft Dough--Dough which lends itself to spoon-dropped or bagged-out products.

Stir--To mix with a circular motion in combining ingredients.

Sugar and Other Sweeteners--Improves taste, flavor, color, tenderness and helps to keep the product fresh.

Texture--Inside grain or degree of smoothness in a product.

Thickening Agents--Starch products used to thicken fresh and frozen pies, i.e., flour, cornstarch, and tapioca.

Tough--Too firm in texture; too hard to chew; sometimes rubbery.

Turnovers--Fruit filled desserts made from puff and flaky pastry.

Volume--Size of a product.

Wash--To brush the outside of a product with a liquid such as egg, milk or egg wash before and/or after baking.

Whip--Incorporate air into a mixture through rapid beating.

Lesson 2: Pastry

Module 5--Desserts: The Happy Ending

I. Instructor preparation for class activities

A. Assemble the following equipment:

Disposable aluminum pie tins
Scales
Mixer
Rolling pins

B. Have available the following ingredients:

Pastry flour
Vegetable shortening
Salt
Cold water
Pie fillings

C. Duplicate sufficient copies of these handouts:

1. Pie Making
2. Pastry
3. Score Card--Pastry
4. Possible Causes for Pastry Failures
5. Game, Word Search: Pastry

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Introduction Any dish of fish, flesh, fowl, or fruit covered on top with a crust of some sort is a pie. In America, pies are more often than not dessert pies, baked in a shallow pan with a bottom crust. In England, this type of pie is known as a tart. There are many kinds of crusts used for pies: crumbs, meringues, biscuits, as well as regular pastry. Americans inherit their love of pies from the English. In the 14th century, London was full of cookshops selling deep-dish meat pies with a heavy crust. The famous English mince pie, the Christmas pie that Little Jack Horner ate in his corner, evolved from these early meat pies. When the colonists came to this country they brought with them their love for the English meat pies and dessert tarts. Until the Revolution, women continued the custom of baking pies in deep pastry shells covered with a top or "coffin". Sometime after we declared our Independence, a thrifty New England housewife realized that flat pies, or "tarts", needed less filling, and now the traditional American pie is a flat one. Several pies are particularly associated with the United States. There is the pumpkin pie, a refinement of the first pumpkin pies that were merely hollowed-out whole pumpkins; the molasses-flavored shoo-fly pies of the Pennsylvania Dutch; and most famous of all—American apple pie.	
II. Pie crusts: A. Flaky--in which flour and fat are mixed only until fat is size of large beans. Flakiness is achieved by having fat particles separate layers of dough. The fat melts, forming a pool, steam forms here, and raises the dough. B. Mealy--Mix flour and shortening to consistency of course cornmeal. Mealy crusts soak less than others and so they are used for custard pies, pumpkin pies and other pies where an uncooked filling is put into an unbaked crust.	Discuss handout #1--Pie Making Instructor or student prepare one recipe mealy pie dough as a demonstration Optional: Slurry method of combining ingredients may be demonstrated.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
III. Ingredients	
A. Pastry flour--Use soft wheat flour. Stronger flour requires larger proportion of fat.	Handout #2--Pastry Demonstration of adjusting recipes
B. Fat--Shortens the dough amd makes a tender product. 1. Vegetable shortening--of plastic consistency 2. Some people object to taste of lard 3. Butter improves flavor, but contains some water	
C. Salt--usually dissolved in water	
D. Water--must be very cold	
E. All ingredients should be cold to prevent gluten formation	
F. Vinegar, baking powder, etc. do not improve the pie crust	
IV. Assembling ingredients--Pie dough must not be overmixed--mix only enough to distribute water. A pie dough is better if it is left to stand for at least 15 minutes after mixing. The dough is easier to roll and baking shrink of the dough is less.	Discuss different methods of mixing pie crust and the various ingredients used.
V. Rolling pie dough	Each student mix a household recipe of pastry. Roll one or more pie crusts, bake and score.
A. Single-crust pies--Single crust pies have only a bottom crust. They can be prebaked and filled with a cream pudding filling and topped with a meringue or whipped cream or can contain a filling added to the unbaked crust and baked, as for a custard, pumpkin, or pecan pie.	
B. Double-crust pies--are usually filled with fruit and topped with a top crust sealed around the edge to the bottom crust.	
VI. Pie trimmings--When pie crusts are being rolled out, care should be taken to keep the size of each piece as close as possible to the size of the pans, thus keeping pie trimmings to a minimum. Pie trimmings should not be used to make up more than 50% of the piece of dough and should be used for bottom crusts only.	Experiment--reroll the remaining dough 5-8 times: roll 1/8-inch (0.3 cm) thick; place on baking sheet; prick; bake. Compare with pastry shell for tenderness and flakiness.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VII. Filling and Meringue--A 9-inch pie requires 3 to 4 cups of filling. A meringue or whipped cream takes up some space so less filling can be used. Management should see that pie markers are used so all cuts are the same at service. Some pies are of better quality if slightly warm at service.	
VIII. Baking pastry A. Pie washes--Milk, cream, eggs and milk, melted butter and water are the various kinds of pie washes used to improve eye appeal of pie crusts. The type used depends upon the finish required on the particular product. B. Temperature: Bake in a 425° F. (220° C.) oven for 8-10 minutes or until very pale golden brown. If air is trapped under the pastry, the crust will tend to "hump" during the baking period. Check the pastry shell after the first 4 or 5 minutes of baking. If the pastry is bulging up from the bottom of the pan, quickly prick the pastry before it is "set" with baking.	
IX. Pie Fillings A. Fruit pie B. Cream pie C. Chiffon pie D. Soft pie E. Specialty pies	Discuss popular varieties of pie and examine recipes in Food for Fifty.
X. Commercial frozen pies A. Quality B. Cost per portion	
Pies and pastries are popular desserts but they require considerable labor and expensive ingredients. Many operations now purchase ready-made pies and pastries; they do not have the specialized labor to make these products.	If time permits, students will prepare double crust fruit pies and single crust cream pies with meringue or whipped topping.

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 2: Pastry

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
XI. Scoring pies and pastry	Betty Crocker Score Card for Pastry--Handout #3 Possible Causes for Pastry Failure--Handout #4
XII. Portioning Pie Marker	Demonstrate cutting and serving pies-- 5, 6, 7 pieces per pie
XIII. Make reading assignment for next class Select recipes for next class Prepare market order	

PIE MAKING

Pie Crusts

There are two basic types of pie crusts--flaky pie crust and mealy pie crust. Although they may contain identical ingredients in the same amounts, the results may be quite different.

Flaky crust is made by rubbing the flour and shortening together until they become nuggets the size of large dry beans before adding the liquid and salt.

Mealy crust is made by rubbing the flour and shortening together until there is a fine distribution of the shortening through the flour, which becomes like meal, before adding the liquid and salt.

The essential ingredients that go into the making of good pie crust are flour, vegetable shortening (with some butter added), salt, and cold water. The salt is usually dissolved in the water. Some formulas may call for other ingredients, such as vinegar or baking powder; but these items do not improve the crust. One important point is never to overmix pie dough.

When crusts are being rolled out, care should be taken to keep the size of each piece as near as possible to the size of the pans, thus keeping the size of the trimmings to a minimum. Pie trimming should be used to make no more than 50 per cent of a crust and used for the bottom crust only.

Starches and flour are used as thickening agents in pie fillings. Starches are used more often since they do not have a tendency to discolor and become gummy. From two to five ounces of cornstarch for a quart of liquid is the approximate amount used in the preparation of different fillings.

Pie Fillings

There are four main types of pie fillings:

1. Fruit pie. The most popular fruit pies are apple, pineapple, cherry, apricot, peach, and prune. The fruit used may be fresh, frozen, canned, dried, or prepared pie filling.

2. Cream pie. Vanilla, chocolate, butterscotch, banana, and coconut are the most popular cream pies. Care should be taken to acquire a good smooth cream with a delicate flavor. This cream filling is always placed into pre-baked pie shells.

3. Chiffon pie. Both cream pies and fruit pies may be converted into chiffon pies by folding the meringue into the mixture.

4. Soft pie. Pumpkin, sweet potato, squash, custard, and pecan pies are known as "soft" pies. They require a deep pie plate with an additional fluted pie crust rim. Soft pies are made with an unbaked crust and uncooked filling. The filling is "set" during the baking process because it contains eggs which help in the coagulation.

PASTRY

1. A good pastry is light, crisp, tender, and a golden brown color. It may be flaky, semi-flaky or mealy, depending on the type of crust. The appearance on the surface is rough and blistery, depending on the flakiness of the crust.

2. Firm plastic fats (shortening or lard) are more desirable for pastry. Moisture present in butter (80% fat) or margarine develops the gluten in flour, making a tough crust.

3. All-purpose flour is very good for a flaky crust. Pastry flour produces a more tender, less flaky crust that is hard to handle.

4. Salt adds flavor. Salt may be added either to flour or water.

5. Cold water (40° F.) is used for pastry. Too much water causes toughness; not enough water makes a crumbly mess.

6. Using dough hook attachment on large mixer, blend fat, flour with mixer at low speed until fat is dispersed in flour about the size of peas. Timing in breaking up the fat or shortening into particles is the most important factor in mixing dough by machine.

7. Dissolve salt in water (cold). Add slowly to mixture and blend. Handle as little as possible. Press together and chill in refrigerator.

8. Using a dough cutter and scales, scale off 5 ounces for bottom crusts of 9 inch pans. Shape with hands and place in center of lightly floured board or bakers table.

9. Roll out in circular form so dough is of even thickness and will fill a pan with 3/4 in. overlap for bottom crust or 1/2 in. over-lap for pie that will have a top crust. Don't handle, knead or reroll unnecessarily.

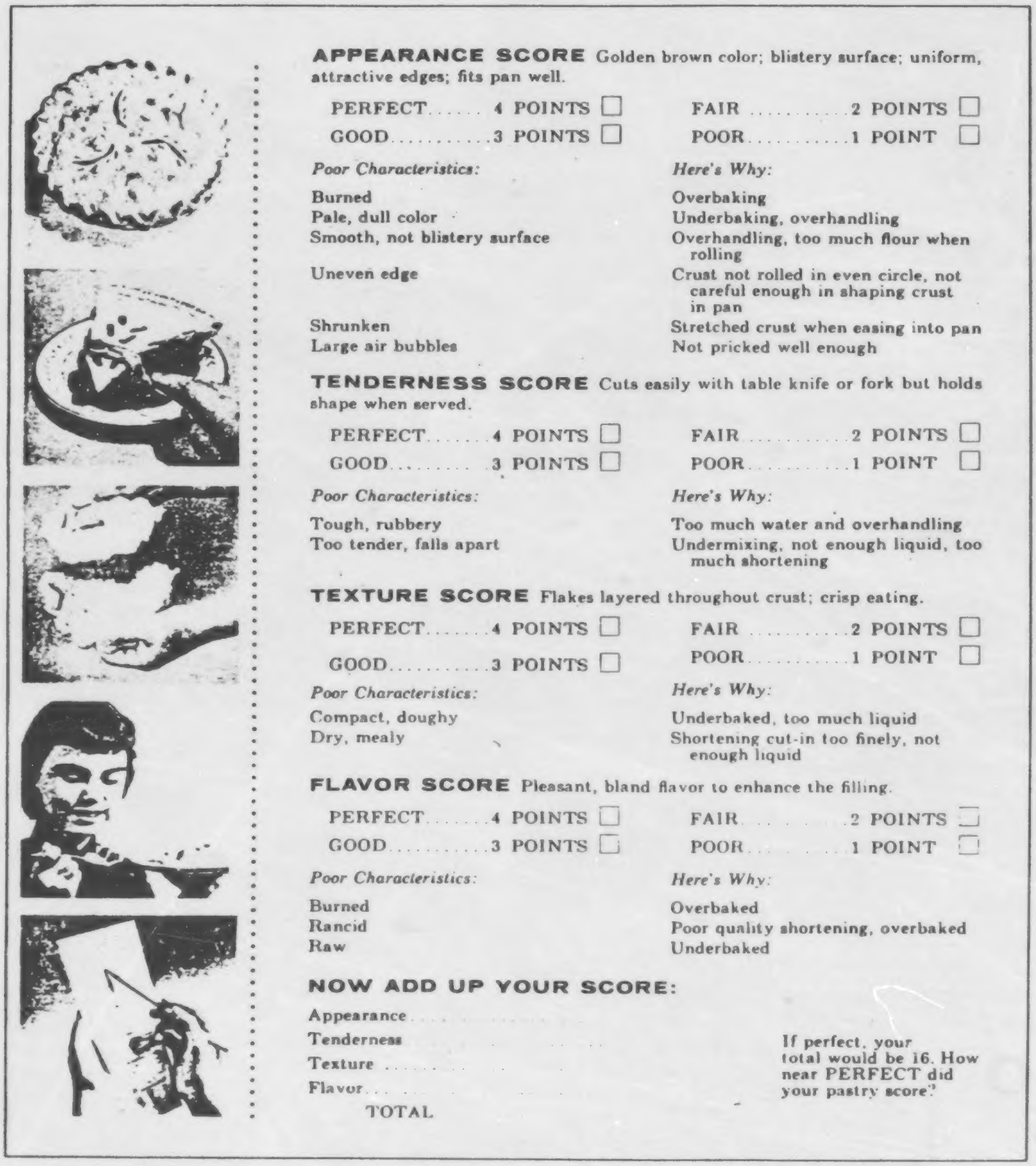
10. Use the right size of pan:
    4 oz. for 8" tin
    5 oz. for 9" tin
    4 lb. for ½ size pan
    8 lb. for 18 x 26" sheet pan

11. Place dough in center of pan. May be rolled over rolling pin or over palm of hand to transfer to pan. Flute edges. Trim off excess dough. Prick bottom with fork. Bake at 425° F. about 10 minutes.

12. A soggy bottom crust of a fruit pie may be caused by using a shiny pie pan, or placing pie pan on a cookie sheet or aluminum foil.

SCORE CARD E - PASTRY

Betty Crocker Pastry Score Card



APPEARANCE SCORE Golden brown color; blistery surface; uniform, attractive edges; fits pan well.

PERFECT	4 POINTS ☐	FAIR	2 POINTS ☐
GOOD	3 POINTS ☐	POOR	1 POINT ☐

Poor Characteristics:	*Here's Why:*
Burned	Overbaking
Pale, dull color	Underbaking, overhandling
Smooth, not blistery surface	Overhandling, too much flour when rolling
Uneven edge	Crust not rolled in even circle, not careful enough in shaping crust in pan
Shrunken	Stretched crust when easing into pan
Large air bubbles	Not pricked well enough

TENDERNESS SCORE Cuts easily with table knife or fork but holds shape when served.

PERFECT	4 POINTS ☐	FAIR	2 POINTS ☐
GOOD	3 POINTS ☐	POOR	1 POINT ☐

Poor Characteristics:	*Here's Why:*
Tough, rubbery	Too much water and overhandling
Too tender, falls apart	Undermixing, not enough liquid, too much shortening

TEXTURE SCORE Flakes layered throughout crust; crisp eating.

PERFECT	4 POINTS ☐	FAIR	2 POINTS ☐
GOOD	3 POINTS ☐	POOR	1 POINT ☐

Poor Characteristics:	*Here's Why:*
Compact, doughy	Underbaked, too much liquid
Dry, mealy	Shortening cut-in too finely, not enough liquid

FLAVOR SCORE Pleasant, bland flavor to enhance the filling.

PERFECT	4 POINTS ☐	FAIR	2 POINTS ☐
GOOD	3 POINTS ☐	POOR	1 POINT ☐

Poor Characteristics:	*Here's Why:*
Burned	Overbaked
Rancid	Poor quality shortening, overbaked
Raw	Underbaked

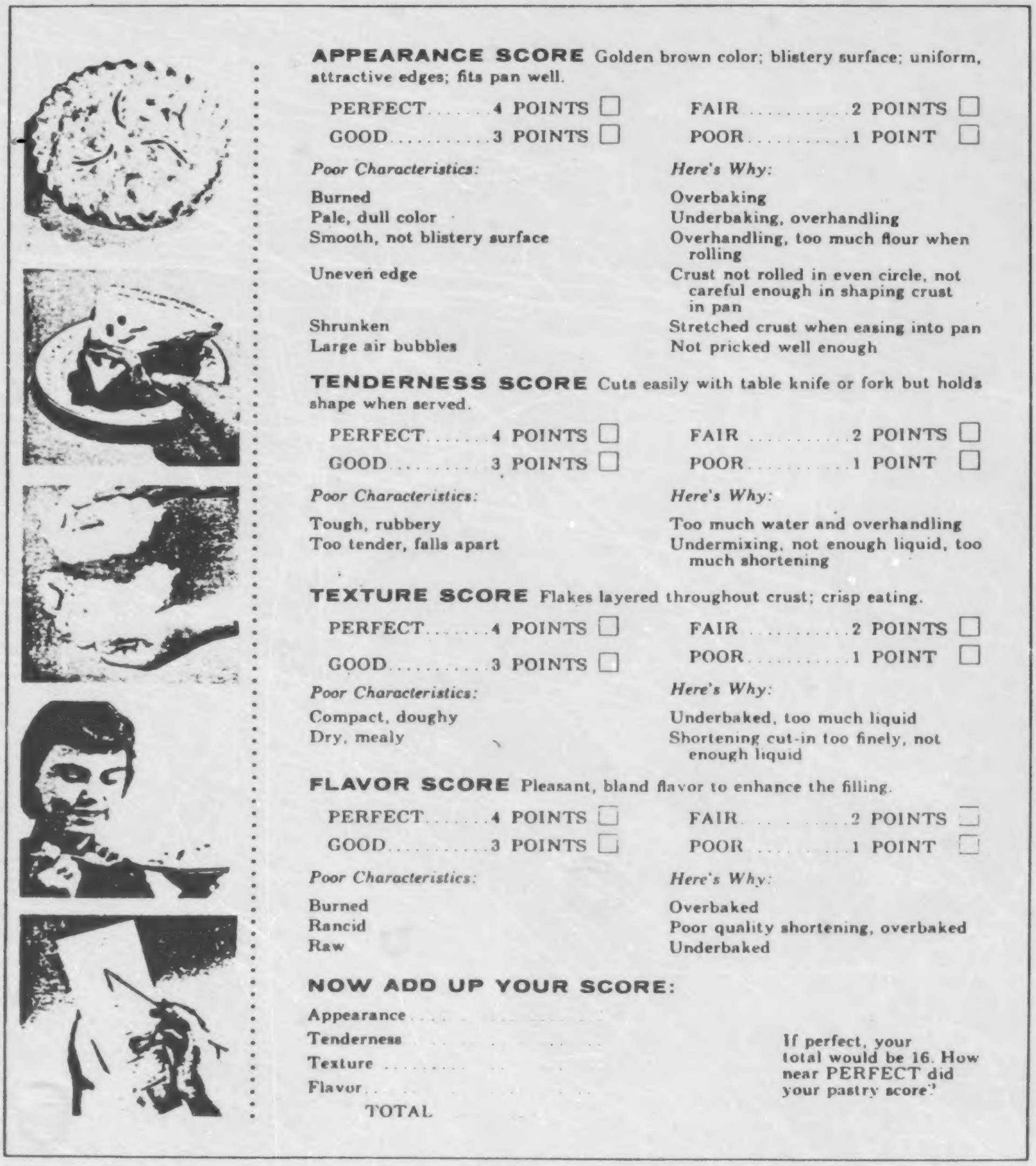
NOW ADD UP YOUR SCORE:

Appearance ....
Tenderness ....
Texture ....
Flavor ....
TOTAL

If perfect, your total would be 16. How near PERFECT did your pastry score?

SCORE CARD E - PASTRY

Betty Crocker Pastry Score Card



APPEARANCE SCORE Golden brown color; blistery surface; uniform, attractive edges; fits pan well.

PERFECT........4 POINTS ☐	FAIR ....2 POINTS ☐
GOOD...........3 POINTS ☐	POOR............1 POINT ☐

Poor Characteristics:	*Here's Why:*
Burned	Overbaking
Pale, dull color	Underbaking, overhandling
Smooth, not blistery surface	Overhandling, too much flour when rolling
Uneven edge	Crust not rolled in even circle, not careful enough in shaping crust in pan
Shrunken	Stretched crust when easing into pan
Large air bubbles	Not pricked well enough

TENDERNESS SCORE Cuts easily with table knife or fork but holds shape when served.

PERFECT........4 POINTS ☐	FAIR ....2 POINTS ☐
GOOD...........3 POINTS ☐	POOR............1 POINT ☐

Poor Characteristics:	*Here's Why:*
Tough, rubbery	Too much water and overhandling
Too tender, falls apart	Undermixing, not enough liquid, too much shortening

TEXTURE SCORE Flakes layered throughout crust; crisp eating.

PERFECT........4 POINTS ☐	FAIR ....2 POINTS ☐
GOOD...........3 POINTS ☐	POOR............1 POINT ☐

Poor Characteristics:	*Here's Why:*
Compact, doughy	Underbaked, too much liquid
Dry, mealy	Shortening cut-in too finely, not enough liquid

FLAVOR SCORE Pleasant, bland flavor to enhance the filling.

PERFECT........4 POINTS ☐	FAIR ....2 POINTS ☐
GOOD...........3 POINTS ☐	POOR............1 POINT ☐

Poor Characteristics:	*Here's Why:*
Burned	Overbaked
Rancid	Poor quality shortening, overbaked
Raw	Underbaked

NOW ADD UP YOUR SCORE:

Appearance ....
Tenderness ....
Texture ....
Flavor ....
TOTAL

If perfect, your total would be 16. How near PERFECT did your pastry score?

POSSIBLE CAUSES FOR PASTRY FAILURES

Difficulty	Cause
Crust shrinks excessively.	Not enough shortening; too much water; dough mixed too much; stretching dough while placing it in pans; or too slow an oven.
Crust is tough.	Too much water; dough mixed too much; not enough shortening; or too much flour on rolling board.
Pastry shell has large air bubbles.	Pastry fitted into pans too tightly; too slow an oven; or pastry not pricked enough
Under crust is soggy.	Too slow an oven; pastry rolled too thick; not enough bottom heat; pie underbaked; or filling too thin
Pies stick to pans.	Boiled over filling; wet pans; new pans; or uneven heat circulation.
Fruit boils out.	Oven too hot; lack of holes in top crust; crust edges not properly sealed; or too much filling in pans
Custard type pies curdle or crack.	Over-baking; not enough moisture; too much flour or starch; or too many eggs.
Lemon or cream pies crack.	Too much starch in filling; too many eggs in filling; or filling lacks fat.
Fillings break down.	Too much acid in the filling or cooling too slowly.
Meringue shrinks.	Moisture in egg whites; whites under-whipped; filling too thin; insufficient sugar; or pies stored in closed containers.
Crust does not brown.	Too little fat; too much water; too much flour on board; overmixed; rolled too thick; oven temperature too low.

Word Search: Pastry

Directions: There are 50 terms relating to pastry hidden in the puzzle below. Using the clues to help you remember the terms, circle the words as you find them. Then look back over the puzzle and write down all of the *uncircled* letters in order from left to right in the spaces at the end of the clues. This will give you a "secret" sentence that offers good advice!

C	O	N	V	E	N	T	I	O	N	A	L	A	T	T	I	C	E	P	U	M	P	K	I	N
O	G	T	F	L	O	U	R	H	F	E	I	W	A	P	P	L	E	A	P	E	C	A	N	A
C	R	E	A	M	Y	R	E	F	R	I	G	E	R	A	T	O	R	S	P	R	I	C	K	S
O	E	Y	C	O	U	N	H	L	O	A	H	S	T	A	R	C	H	T	O	I	L	S	B	H
N	E	F	O	R	K	O	B	U	Z	N	T	D	S	L	F	A	T	R	C	N	E	T	A	O
U	C	H	L	E	D	V	E	T	E	O	U	S	H	E	L	L	S	Y	H	G	G	H	N	R
T	E	N	D	E	R	E	F	E	N	W	I	L	L	E	M	O	N	B	I	U	M	E	A	T
F	L	A	K	Y	L	R	O	L	L	I	N	G	P	I	N	R	D	L	F	E	E	C	N	E
W	A	X	E	D	T	S	R	S	A	L	T	R	E	R	M	I	I	E	F	S	P	H	A	N
A	N	E	F	O	I	L	E	C	H	O	C	O	L	A	T	E	I	N	O	H	E	E	S	I
T	P	E	V	A	N	I	L	L	A	S	U	O	C	C	E	S	S	D	N	S	A	E	O	N
E	I	F	C	U	S	T	A	R	D	R	Y	M	I	X	E	S	Y	E	O	U	C	S	R	G
R	E	C	I	P	E	S	U	G	A	R	P	A	S	C	H	E	R	R	Y	T	H	E	R	Y

Clues:

1. The term meaning separated into thin layers is __________.
2. To crimp or twist the edge of pastry with fingers is to __________.
3. Beaten egg white and sugar mixtures are called __________.
4. This type of pie was first made by pioneers.
5. This is the country where pies supposedly originated.
6. __________ is the fruit that is America's favorite for pie.
7. This fruit often is associated with George Washington.
8. Pastry means dough rich in __________.
9. This ingredient provides the structure in pastry.
10. This ingredient is added to pastry for flavor.
11. Butter or margarine would make pastry less __________.
12. This type of vegetable fat is very good for making pastry.
13. These fats make pastry that is mealy.
14. The usual liquid in pastry is __________.
15. The common method of making pastry is __________.
16. This is a useful tool for cutting shortening into flour.
17. This is the best tool for mixing the liquid into the flour and shortening.
18. The temperature of water should be __________ so it doesn't melt the fat.

19. Roll pastry between sheets of __________ paper.
20. This is the best tool for rolling out pastry.
21. Milk and egg mixture baked with the pastry.
22. Before baking a pie shell, you should __________ the sides and bottom.
23. For a two-crust pie, cut __________ in the top to allow steam to escape.
24. Cover the fluted edge of a two-crust pie with __________ to prevent overbrowning.
25. Strips of pastry woven across the top of a filled pie is called __________.
26. This common type of nut is used in a custard-type pie.
27. This type of pie is filled with a pudding mixture.
28. Pastry desserts should be served with a __________ meal.
29. The usual thickening ingredient for pudding-type fillings is __________.
30. This citrus fruit juice often is made into a cream pie filling.
31. Folded-over squares of filled pastry are __________.
32. This dairy product may be sprinkled on pastry strips.
33. One food that could be used as a filling for main-dish pies is __________.
34. Pastry is very high in __________.
35. This white, flaked fruit may be added to vanilla cream pie filling.
36. Custard, cream, and main-dish pies should be stored in the __________.
37. Convenience pastry and pie fillings are sold as __________ __________. (2 words)
38. These convenience pies may require baking or thawing or be ready to eat.
39. The cacao-bean product often used for cream pie fillings is called __________.
40. One type of convenience item is frozen pie __________.
41. To most of us, pastry means __________.
42. Most pies should be frozen __________ baking.
43. Miniature or individual pies are called __________.
44. This extract usually is used in flavoring cream pie fillings.
45. This tropical fruit often is sliced raw into cream pie fillings.
46. A cooked gelatin mixture made fluffy with beaten eggs is __________.
47. Most pie fillings contain __________ for sweetness.
48. This yellow fruit with one large seed makes delicious pies.
49. Most fruit pies may be stored at __________ temperature.
50. For any pastry product, it's important to follow the __________ correctly.

"Secret" sentence:

___ ___ ___ _______ ___ _____ ____
_________ ___ _______ __ ____ ______!

Word Search

C	O	N	V	E	N	T	I	O	N	A	L	A	T	T	I	C	E	P	U	M	P	K	I	N
O	G	T	F	L	O	U	R	H	F	E	I	W	A	P	P	L	E	A	P	E	C	A	N	A
C	R	E	A	M	Y	R	E	F	R	I	G	E	R	A	T	O	R	S	P	R	I	C	K	S
O	E	Y	C	O	U	N	H	L	O	A	H	S	T	A	R	C	H	T	O	I	L	S	B	H
N	E	F	O	R	K	O	B	U	Z	N	T	D	S	L	F	A	T	R	C	N	E	T	A	O
U	C	H	L	E	D	V	E	T	E	O	U	S	H	E	L	L	S	Y	H	G	G	H	N	R
T	E	N	D	E	R	E	F	E	N	W	I	L	L	E	M	O	N	B	I	U	M	E	A	T
F	L	A	K	Y	L	R	O	L	L	I	N	G	P	I	N	R	D	L	F	E	E	C	N	E
W	A	X	E	D	T	S	R	S	A	L	T	R	E	R	M	I	I	E	F	S	P	H	A	N
A	N	E	F	O	I	L	E	C	H	O	C	O	L	A	T	E	I	N	O	H	E	E	S	I
T	P	E	V	A	N	I	L	L	A	S	U	O	C	C	E	S	S	D	N	S	A	E	O	N
E	I	F	C	U	S	T	A	R	D	R	Y	M	I	X	E	S	Y	E	O	U	C	S	R	G
R	E	C	I	P	E	S	U	G	A	R	P	A	S	C	H	E	R	R	Y	T	H	E	R	Y

Clues:
1. Flaky; 2. Flute; 3. Meringues; 4. Pumpkin; 5. Greece; 6. Apple; 7. Cherry; 8. Fat; 9. Flour; 10. Salt; 11. Tender; 12. Shortening; 13. Oils; 14. Water; 15. Conventional; 16. Pastry blender; 17. Fork; 18. Cold; 19. Waxed; 20. Rolling pin; 21. Custard; 22. Prick; 23. Slits; 24. Foil; 25. Lattice; 26. Pecan; 27. Cream; 28. Light; 29. Starch; 30. Lemon; 31. Turnovers; 32. Cheese; 33. Meat; 34. Calories; 35. Coconut; 36. Refrigerator; 37. Dry mixes; 38. Frozen; 39. Chocolate; 40. Shells; 41. Pie; 42. Before; 43. Tarts; 44. Vanilla; 45. Bananas; 46. Chiffon; 47. Sugar; 48. Peach; 49. Room; 50. Recipe

"Secret" sentence: The way you handle the dough will determine the success of your pastry!

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 3: Puddings, Custard and Soft Meringues

Module 5--Desserts: The Happy Ending

I. Instructor preparation for class activities

A. Assemble the following equipment:

Steam Jacket Kettle
Double boiler
Mixer
Scales
Wire' Whip
Baking dishes
Measuring spoons

B. Have available the following ingredients:

Flour
Cornstarch
Tapioca
Waxy Maize
Eggs
Milk
Cocoa
Sugar; brown and white
Flavorings
Lemon juice
Instant pudding, chocolate
1 can Tapioca pudding

C. Duplicate sufficient copies of these handouts:

1. Score Card for Puddings and Desserts
2. Soft Meringue Preparation
3. Game: Scrambled Words: Desserts

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 3: Puddings, Custard and Soft Meringues

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Review regulations covered in lesson one	
II. Principles of starch cookery:	
A. Starches frequently used as thickeners are:	
1. Those derived from grain	
a. Cornstarch--has about twice thickening power of flour--makes a clearer sauce than with flour	Prepare 1 household size recipe chocolate pudding using cornstarch
b. Waxy maize is a modified cornstarch used when the product is to be frozen because it will not separate as readily as one with flour or cornstarch. However, it makes a weak gel.	
c. Wheat starch (flour) which is a mixture of starch and protein, so nearly double the amount is needed.	Prepare 1 household recipe of the same pudding using flour
2. Those derived from roots such as tapioca and arrowroot.	Prepare 1 household size recipe tapioca pudding
a. Thicken at a lower temperature than flour: (140°F.)	
b. Tend to become thin and gummy when heated over long periods	
3. Pregelatinized, in which the starch has been pre-cooked so that it thickens without heating--Example: in "instant" puddings or "instant" pie glaze	Prepare a 3 oz. package instant chocolate pudding Use 1 #2 can commercial tapioca pudding for comparison Serve above puddings with a variety of garnishes
B. Gelatinization	
1. A process in which the starch absorbs water and swells	
2. Is accelerated by heat	
3. When starch can absorb no more water, thickening is optimum	
C. Separating starch granules before heating to prevent lumps by	
1. Coating starch granules with fat (a roux) then adding hot liquid cook until thick	
2. Blending starch and sugar, then adding to liquid	
3. Mixing cold liquid with starch, then adding to hot liquid	
D. Equipment used in preparation of pudding, custards and soft meringues	Demonstrate operation of steam jacketed kettle
Steam jacketed kettle	
Double boiler	
Pan on top of stove	
Oven	

LESSON CONTENT

E. Effect of under cooking
  1. During early stages, starch granules hold water loosley. If cooking stops at this stage the gel collapses. A watery, weepy mixture results.
  2. If using cornstarch be sure "raw starch" taste is gone
F. Effect of overstirring:
  1. Overstirring causes breakdown of starch gel. Cook starch mixtures quickly.
G. To avoid scum forming on cooked pudding, place sheet of plastic wrap directly on surface while cooling.

III. Function of ingredients in pudding and custards
  A. Eggs
    1. Add thickening; color and flavor, volume and tenderness to finished product. Thickening power is from coagulation of protein.
      a. Because starches require high temperatures to gelatinize the starch granules, and egg protein requires lower temperature to avoid curdling. Add eggs last. Mix a small amount of hot pudding to beaten eggs, then stir into pudding during last 1 or 2 minutes of cooking.
  B. Sugar--Tenderizes
    1. Too much makes a syrupy product and interferes with thickening of the eggs and starch
    2. Always use tested recipes and follow carefully
  C. Acid
    1. Breaks down starch gel, reducing its thickening power
    2. Examples are lemon juice in lemon pudding and brown sugar in butterscotch pudding
      a. Add acid after starch is completely cooked and partially cooled there is very little thinning effect
  D. Nutritional contribution of milk and egg desserts
    1. Protein and calcium from milk
       Protein and vitamin A in eggs

CLASS ACTIVITY AND EVALUATION

Prepare lemon pie filling from a household size recipe or lemon filling (for cake) page 186, Food For Fifty

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 3: Puddings, Custard
and Soft Meringues

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
IV. Custards--use a thermometer. Bake at 350° to internal temperature of 185°. Baking time is critical factor. A custard is completely cooked when a pointed knife inserted into it comes out clean. Cooks usually tell when a custard is done by shaking it slightly in the oven. It is removed while the center is still slightly soft so that cooking finishes from the heat in the custard. Bake in a water bath. Test with knife: overcooking results in syneresis. Custards prepared with whole milk or light cream are less prone to syneresis. The egg protein forms a network with water in the milk. (Visualize a honeycomb filled with honey). Too high heat squeezes out water. Too much liquid makes a watery custard. Accurate measurement a must. Remember that custard continues to cook after removal from oven. Examples of custards are: Stirred custard Custard pie Cup custard Pumpkin or squash pie Quiche Lorraine Baked fondues	Prepare baked custard, Food For Fifty, page 364. Bake 1/4 as cup custard, 1/2 as rice custard and 1/4 as bread pudding Optional: Compare with custard made from mix.
V. Soft Meringues Foam structure formed by air dispersed throughout eggwhite, becomes rigid when baked. Salt, vanilla and cream of tartar, (if used) are added to egg white at foamy stage. When foam holds soft peaks, sugar is added gradually but quickly and beaten at high speed until stiff, but not dry.. (only the tip of the peak falls over when beater is pulled from foam). Avoid over beating to dry stage. Very important that all utensils and ingredients be free of fat. Greater volume results if room temperature egg whites are used.	Prepare ½ recipe meringue for pies, Food For Fifty, page 312. Demonstrate covering pudding with meringue and browning in oven.
VI Handling and Storing prepared puddings and custards A. Chill creamed puddings and custards 2 hours before serving B. Store in refrigerator. Serve within 24 hours C. Microorganisms grown in milk and egg mixtures very easily.	

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VII. Score prepared products using attached score card	
VIII. Make reading assignment for next class Select recipes to be prepared at next class Prepare market order	While some students are waiting for products to chill, play game: Scrambled words: Desserts

SCORE CARD FOR PUDDINGS AND DESSERTS

Evaluate against characteristics of a high quality product using a 5-point scale--5=most desirable, 1=least desirable.

Product	Appearance	Flavor	Tenderness	Consistency	General Acceptability
#1. Chocolate pudding using cornstarch					
#2. Chocolate pudding using flour					
#3. Chocolate instant pudding					
#4. Tapioca pudding					
#5. Canned tapioca pudding					
#6. Lemon filling					
#7. Baked custard					
#8. Rice custard					
#9. Bread pudding					
#10. Soft meringue					

CHARACTERISTICS OF HIGH QUALITY BAKED CUSTARDS

Appearance: Pale golden brown surface.

Consistency: Even gel structure which holds a clear, sharp cut edge.

Flavor: Nutmeg may mask slight egg flavor.

CHARACTERISTICS OF HIGH QUALITY STARCH-EGG PRODUCTS

Appearance: Puddings or cooked fruit salad dressing have shiny surface. Film forms on top as cooked mixture cools.

Consistency: Puddings will "mound" on serving spoon or as a pie filling be firm enough to retain a firm, clear-cut edge. Smooth.

Flavor:

Chocolate Pudding: Distinct chocolate; slightly sweet, well-rounded flavor; not bitter, flat or starchy.

Tapioca Pudding: Sweet with slight egg and slight vanilla flavor.

Lemon Pudding: Tart lemon, not too sour.

CHARACTERISTICS OF HIGH QUALITY MERINGUE

Appearance: Top is golden brown with peaks slightly darker, top surface is uneven.

Texture: Even distribution of small gas holes; cell walls are thin.

Tenderness: Top crust may be slightly tough to cut through, interior is easily cut with a knife and leaves a clean-cut edge.

Flavor: Mild, sweet.

SOFT MERINGUE PREPARATION

1. Fat interferes with foam formation; utensils and egg whites should be free of fat.
2. Egg whites should be beaten to soft foam with whip. Egg whites should be at room temperature.
3. Sugar should be added gradually at the rate of 2 T. per egg; beat until sugar is dissolved. The sugar should be very fine. If the sugar is not completely dissolved by beating, beads of moisture may form on baked meringue. Too much sugar will produce a sugary meringue which will stick to the knife when cut; too little sugar will cause meringue to be tough.
4. Acid helps stabilize the foam of egg whites; cream of tartar or lemon juice may be added to the egg whites.
5. Meringue should be attached securely to the crust and spread by working from the edge to the center. A nine-inch pie requires 4 to 5 ounces of meringue to cover it well.
6. Meringue should be baked at 375°F. about 10 minutes; overbaking or baking at too low temperature may cause shrinkage.
7. The process of baking meringue is one of drying and browning.
8. Soft meringues are used to add to the attractiveness of pies, puddings, and tarts. Meringues may be applied in fancy shapes or designs.
9. Hard meringues contain more sugar and are baked separately.

Scrambled Words: Desserts

Directions: Read each clue to help you unscramble the scrambled words. Write the correct answer on the blank.

1. fruits stewed in a syrup — TMOEPCO __________
2. what the French call cornstarch pudding — LCABN GAEMN __________ __________
3. easiest dessert to prepare — SERHF IRTUF __________ __________
4. fruit topped with coconut — BSAMOAIR __________
5. milk desserts thickened with starch — DNSPDIGU __________
6. milk and egg mixture cooked in an oven — KBEDA RSCDAUT __________ __________
7. soft custard topped with meringue — NLTAFIGO ASDLNI __________ __________
8. fruit gelatins which have been beaten — TGLIENA PHSWI __________ __________
9. gelatin and egg white mixtures — SSNOW __________
10. an egg-yolk custard with gelatin — PNHSASI ECMAR __________ __________
11. gelatin and whipped cream mixtures molded with ladyfingers or cake — TAHOTSRCEL __________
12. gelatin and whipped cream mixtures molded without cake — SUSOSME __________
13. thin sponge cake with filling rolled inside — KEAC LOLR __________ __________
14. sweetened fruit encased with sweet biscuit dough — NMLPIUDSG __________
15. fruit fillings topped with biscuit dough — BOBRECSO __________
16. soft dough pastry in a round shape — ERMAC FUFSP __________ __________
17. soft dough pastry in a rectangular shape — ACERSLI __________
18. frozen mixtures of fruit juices, sugar, and egg whites or gelatin — TRESBEHS __________
19. type of ice cream that contains egg — CREFHN __________
20. sweetened whipped cream and flavoring frozen without stirring — IPASRTAF __________

Scrambled Words
1. COMPOTE; 2. BLANC MANGE; 3. FRESH FRUIT; 4. AMBROSIA; 5. PUDDINGS;
6. BAKED CUSTARD; 7. FLOATING ISLAND; 8. GELATIN WHIPS; 9. SNOWS;
10. SPANISH CREAM; 11. CHARLOTTES; 12. MOUSSES; 13. CAKE ROLL;
14. DUMPLINGS; 15. COBBLERS; 16. CREAM PUFFS; 17. ECLAIRS; 18. SHERBETS;
19. FRENCH; 20. PARFAITS

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 4: Cookies Module 5--Desserts: The Happy Ending

I. Instructor preparation before class

A. Have available the following ingredients:

8 oz.	Margarine
4½#	Sugar
22	Eggs
½ c.	Vanilla
2#	Flour
5 t	Salt
5 t	Baking powder
4 oz.	Cornflakes
28 oz.	Nuts
3 oz.	Coconut
2 t	Soda
2#	Fat
1#	Brown Sugar
1#	Rolled dates quick uncooked
12 oz.	Cake Flour
8 oz.	Cocoa

B. Assemble the following equipment:

5 sheet pans
#50 & #60 dipper
6 sets measuring cups
6 sets measuring spoons
Wax paper
Sifters
Mixer & Attachments
Mixing bowl
Rubber spatula
Scales
Knives
Rolling pin
Cookie cutter
Tea spoons (4)
Plates for displaying
Custard cups

C. Duplicate sufficient copies of these handouts:

1. Types of Cookies
2. Organizing Work for Cookie Baking
3. Common Difficulties in Making Cookies
4. Betty Crocker Score Card for Cookies
5. Cookie Defects and Causes
6. Cookie Crossword Puzzle
7. Cleaning Mixer and Range Ovens

FOOD SERVICE EMPLOYEES SHORT COURSES

Lesson 4: Cookies

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
Introduction-- At one time, what we now call a cookie was referred to as a small cake or sweet biscuit. We must thank the Dutch for providing us with a special name for it. It is derived from Koekje or Koekie, meaning a "small cake." The word "cookie" is an American usage; in England what we know as cookies are called biscuits. There are more varieties of cookies than of any other baked product because there are so many different shapes, sizes, textures and flavorings possible. To the basic ingredients, often the same as those used in cakes, all kinds of flavorings may be added: extracts, spices, nuts and fruits. Decorations of every sort are always in order. Cookies should be baked fresh daily if possible. When it is found necessary to bake ahead, a week's output can be prepared in advance and properly stored. --From Amendola, Joseph and Lundberg, Donald E., Understanding Baking, CBI Publishing Company, Inc., 1970, p. 123.	
I. Types of cookies--Discuss handout #1 A. Rolled B. Refrigerator C. Bag or pressed D. Sheet E. Bar F. Dropped G. Filled	Distribute Handout #1--Types of cookies. Examine recipes in Food for Fifty beginning on p. 218 for examples in which these methods are used.
II. Organizing work for cookie baking--Handout #2	Discuss Handout #2
III. Portion control in cookie preparation	Discuss equipment for and methods of portioning for each of the types of cookies
IV. Time and motion economy in preparation of cookies	Demonstrate time & motion principles--applicable here

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
V. Baking cookies-- Cookies are normally baked at higher temperatures than cakes and must be watched carefully, for too much baking overcolors the cookies and ruins their flavor. Chocolate cookies, especially, burn easily. When cookies are done, they are of the proper color and spring back slightly to the touch. Crisp cookies may be soft while still warm but crisp on cooling. After baking, protect cookies from drafts and too rapid cooling. Many cookies should be removed from the pans while still warm.	
VI. Common Difficulties Encountered in Making Cookies. The Causes and How To Prevent. Handout #3.	Discussion of Handout #3
VII. Preparation of four basic types of cookies--(Food for Fifty) 1. Rolled: Sugar cookies--p. 226 (Make 3 variations) 2. Dropped: Cornflake kisses or macaroons--p. 220 3. Refrigerated: Oatmeal crispies--p. 232 4. Bar or sheet: Brownies--p. 222	Assign recipes to groups
III. Evaluation--Using scorecard (Handout #4) A. Cookies Defects and Causes--Handout #5	Set up samples of cookies for evaluation using Betty Crocker scorecard--Handout #4
IX. Portion Control Review	Count portions made by each recipe to check accuracy of portion control
X. Costing of recipes (optional)	
XI. Storing cookies-- Most cookie batters or doughs freeze well except foam types. Stiff doughs should be thawed under refrigeration but softer mixes may be thawed at room temperature. Do not pack cookies while warm. Store into airtight containers or drawers. Frozen cookies thaw in opened packages in about 15 to 20 minutes. Sometimes a moist cut apple is stored with soft cookies to keep them moist. Do not stack soft cookies. Foam-types dry out easily so make these in batches that are used quickly and store in airtight containers.	
XII. Cookie crossword puzzle (optional)--Handout #6	
III. Cleaning mixer and range ovens--Handout #7	

TYPES OF COOKIES

A. Rolled: Made from a rather stiff dough and rolled on a lightly floured board. The dough will be easier to handle if chilled first. Use pastry cloth and roll to 1/8 inch thick. Cut to desired shape and size with a cookie cutter, or using pastry cutter, cut dough in diamond shape. Avoid rerolling.

B. Refrigerator: Made by slicing a comparatively rich dough which has been thoroughly chilled. Weigh dough at 1 lb. 8 oz. and roll into bars 18 inches long. Roll in waxed paper and place rolls on sheet pans. Refrigerate over night. Slice into 1/4 inch strips and bake.

C. Bag or Press: Put mixture into pastry bag or cookie press with desired size and shaped tube. Press directly into sheet pans. Be sure pans are cool. Garnish, if desired, and bake.

D. Sheet: Made from a stiff batter spread onto sheet pans to bake. Cool and cut into squares or oblongs. Sheet cookies are somewhat cake-like.

E. Bar: Scale dough in 1 lb. pieces and form into a 1 inch wide strip the length of a sheet pan. Place 3 strips per pan, leaving space between. Flatten with fingers. Bake and cut diagonally into bars.

F. Dropped: Drop mixture on sheet pans with a spoon or ice cream scoop. A No. 40 size will give a cookie approximately 3 inches in diameter and a No. 60 will yield a cookie approximately 2 inches in diameter depending, of course, on the stiffness of the dough. Chilled dough can be formed into strips and cut into ½ oz. pieces. If a dough is rich, it will spread by itself. If necessary, it can be flattened with a fork or cookie die.

G. Filled: Filled cookies are made by placing such foods as fruits, jelly, and mincemeat between two layers of shaped cookie dough. The edges are pressed together before baking to prevent leakage of the filling.

From: Dennler, Louise, Food Preparation: Study Course, Iowa State University Press, Ames, Iowa.

ORGANIZING WORK FOR COOKIE BAKING

A. Use tested, accurately standardized recipes; read them carefully; and follow them accurately. In standardized recipes, the ingredients have been carefully chosen and balanced. Any changes may alter results.

- *1. Do not alter amounts of ingredients. Do not substitute one ingredient for another.
- 2. Use correct standardized tools as measures and use level measurements. This is the only way you will obtain standard results each time.

B. Use correct size pans.

1. For a cake, use the size pan specified by the recipe. If a pan is too large, the batter is not deep enough and a dry, heavy cake results. If pan is too small, the cake may fall during baking.
2. Use shallow cookie sheets for cookies. If a pan is too deep, cookies may burn on the bottom and not brown on the top.
3. Do not allow pans to touch the sides of the oven; stagger them in the oven. This allows free air circulation so products will bake evenly.

C. To be efficient, the first step in preparation of batter or dough products is to assemble materials.

1. Assemble all equipment and ingredients using a cart or trays In this way steps are saved and you will know if all ingredients are on hand.
2. Prepare baking pans as directed. Pans should be prepared before the product is mixed. The shorter the time between mixing and baking, the better the quality.
3. Turn on the oven, setting the regulator at the specified temperature. If the oven is set and turned on as part of the "getting ready," it will be the correct temperature when the mixing is completed.
4. Have ingredients at room temperature. Shortening at room temperature is easy to handle, blends well, and gives better texture and volume that cold shortening. Egg whites give maximum volume at room temperature.
5. Use good quality ingredients. Good quality products cannot be made from poor quality ingredients.

D. Baking.

1. Measure or weigh the mixture as it is put into pans; spread evenly so you will obtain uniform size and baking.
2. Remove from the oven when done When done, the structure of a baked product has set and will not collapse when touched lightly.

COMMON DIFFICULTIES ENCOUNTERED IN MAKING COOKIES

Difficulty	Cause	Prevention
Cookies are too stiff.	Too much flour.	Be sure dough is of right consistency. Do not take up extra flour in rolling. Roll paper-thin for crisp cookies; ¼ inch for soft cookies. Measure ingredients carefully.
Cookies are too hard.	Too much flour. Overbaked.	Use correct proportions for type cookie. Chill before rolling. Watch baking time, and test when minimum time has been reached.
Cookies are too soft.	Too much liquid.	See that the consistency is correct for type of cookie.
	Too much sugar.	Observe proportions given in recipes. Too much sugar melts and increases the proportion of liquid.
	Too much fat.	
Cookie dough crumbles.	The fat required makes a rich dough short and may crumble when rolling.	Work in a few drops of liquid.
	Dough may be too cold.	
Cookies spread in pan.	High percentage of sugar; cookies contain little moisture; sugar melts and cookies spread.	Be sure sugar is right proportion.
	The pan is greased too heavily.	Grease pan lightly unless otherwise stated in recipe.
	There is too much shortening, liquid, soda, or baking powder.	Measure or weigh all ingredients accurately.

SCORE CARD B - COOKIES

Betty Crocker Cookie Score Card

DROP COOKY

Appearance: A fairly uniform mound shape

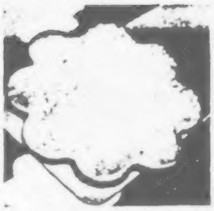
Color: A delicately browned exterior

Texture: An interesting or novelty texture

Flavor: Good flavor

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Irregular size and shape	Improper dropping of dough
Dark, crusty edges	Overbaking; baking sheet too large for oven
Too dry, hard	Overbaking
Doughy	Underbaking
Excessive spreading	Dough too warm; dropping on hot baking sheet; incorrect oven temperature; not peaked when dropped



ROLLED COOKY

Appearance: Retains shape of cutter

Color: Lightly browned surface

Texture: Crisp thin cooky or soft thick cooky (depending on variety)

Flavor: Rich, delicate flavor

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Tough	Excessive rerolling
Loose flour visible on top	Using too much flour when rolling dough
Dryness	Rolling in too much flour or rerolling

BAR COOKY

Appearance: A uniform well-cut shape

Texture: A rich, moist eating quality

Tenderness: A thin delicate crust

Flavor: An appealing flavor

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Dry, crumbly	Overbaking
Hard, crusty top	Overmixing
Crumbles when cut	Cutting bars while too warm

MOLDED COOKY

Appearance: Uniform, well-shaped

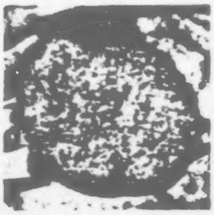
Color: Delicately browned

Texture: Crisp and tender

Flavor: Pleasing, well blended

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Misshaped cooky	Poor molding
Too brown	Overbaking
Crumbly	Insufficient shaping



REFRIGERATOR COOKY

Appearance: Uniform, thin slices

Color: Lightly browned surface

Texture: Crisp and crunchy texture

Flavor: Rich and flavorful

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Irregular shape	Improper molding of dough roll; dough not chilled enough when sliced; thin, sharp knife not used for slicing
Too brown	Overbaking
Soft	Cut too thick

PRESSED COOKY

Appearance: Well shaped and well-defined pattern of cooky. Interesting assortment of sizes and shapes

Color: Delicately browned edges

Texture: Very tender and crisp

Flavor: Rich and buttery flavor

Perfect 4 ☐ *Good 3* ☐ *Fair 2* ☐ *Poor 1* ☐ SCORE___

Poor Characteristics:	Here's Why:
Misshaped	Improper use of cooky press; dough in press either too cold or too warm; placing dough on hot baking sheet; too low an oven temperature
Overbrowned spots	Overbaking

COOKIE DEFECTS AND CAUSES[1]

DEFECTS	CAUSES
Lack of Spread	Too fine a granulation of sugar
	Adding all of sugar at one time
	Excessive mixing, causing toughening of the flour structure or breaking down of sugar crystals or combination of both
	Not enough baking soda
	Oven too hot
Excess Spread	Excessive sugar
	Too soft a batter consistency
	Excessive pan grease
	Too low an oven temperature
	Excessive or improper type shortening
	Too much soda
Fall during baking	Excess baking powder or soda
	Too soft a batter
	Wrong flour
	Improper size
Tough Cookies	Insufficient shortening
	Overmixing batter
	Too much flour
Sticks to Pans	Too soft flour
	Excessive eggs
	Too much sugar
	Sugar spots
	Unclean pans
Lack of Flavor	[illegible]an unclean
	Overbaking
	Too much soda (dull dark color)
	Cooling too quickly
	Improper storage

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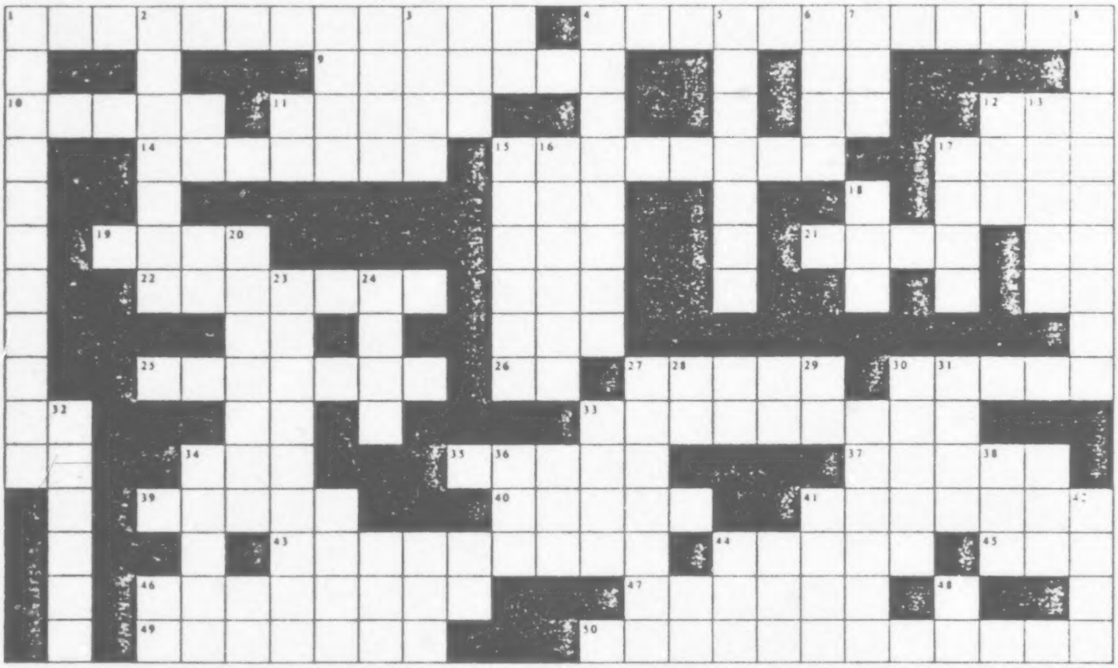
[1] Food Operations Reference Manual. Navy Subsistence Office, Bureau of Supplies and Accounts, NAVSANDA Publication 421, 30 October, 1964. Supt. of Documents, U. S. Govt. Printing Office, Washington, D.C. 20402

Crossword Puzzle: Cookies



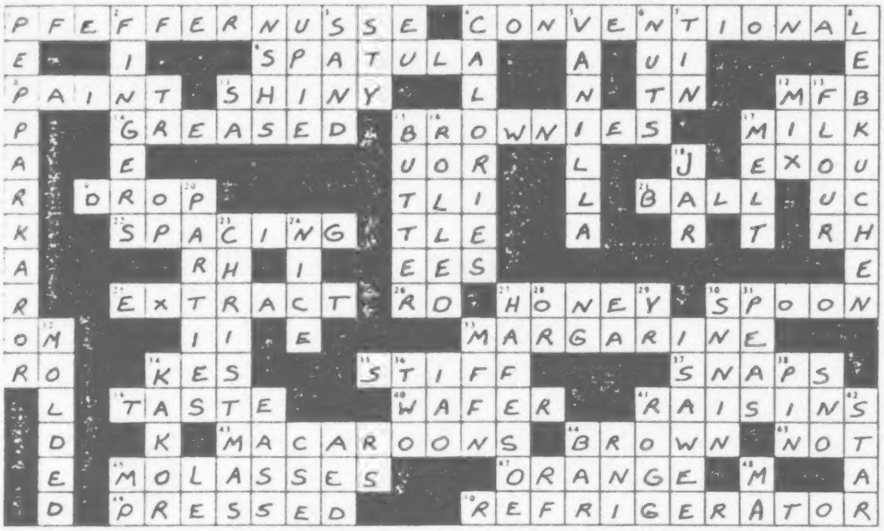
ACROSS:

1. This is a German Christmas Cookie.
4. This is the usual method of mixing cookie dough.
9. A tool used to remove baked cookies from the sheet is a ______.
10. Food coloring can be used as a ______ on baked cookies.
11. A cookie sheet should have this type of surface.
14. For most types of cookies, the sheet should be ______.
15. The most popular type of bar cookies is______.
17. The liquid often used in cookie dough is ______.
19. The classification of cookies pushed from a spoon onto a cookie sheet is ______ cookies.
21. Molded cookies are often made into this shape.
22. This is necessary to prevent cookies from running together during baking.
25. A solution of flavor oils in alcohol is ______.
26. The abbreviation for road is ______.
27. ____________ is a sweet substance made by bees.
30. A utensil used to drop cookie dough onto a cookie sheet is a ______.
33. The vegetable fat similar to butter is ______.
35. This is the consistency of many cookie doughs.
37. These are thin, crisp cookies: ginger______.
39. Most people like cookies because they ______ so good.
40. An example of a very thin, crisp cookie is vanilla ______.
41. This dried fruit often is added to cookie dough.
43. This type of cookie contains no fat.
44. This unrefined sugar often is used as an ingredient in cookie dough.

45. Most cookies are ______ high in protein.
46. This dark sweet syrup is obtained from sugar cane; it is also the name of a cookie.
47. Slices of this fruit may be placed in a cookie jar to keep cookies soft.
49. When making this type of cookie, the dough is forced through a cookie press.
50. This classification of cookie must be chilled before baking.

DOWN:
1. One variety of cookie that originated in Sweden is ______.
2. To shape molded cookies, you use your ______.
3. A Swedish almond-flavored cookie is called a ______ tart.
4. Most cookies are high in ______.
5. This is a common flavoring extract.
6. These provide crunch in many cookies.
7. This metal may be made into cookie sheets.
8. A German honey Christmas cookie is ______.
12. To combine ingredients in a recipe is to ______.
13. The ingredient that provides structure to cookie dough is ______.
15. This flavorful type of fat often is used in cookies.
16. This type of cookies are rolled out and cut into shapes.
17. Only cool cookie sheets should be used so the fat in the dough does not ______ and cause the cookies to spread and run together.
18. This is one type of container in which to store cookies.
20. Cookies are often served at ______.
23. It is traditional to bake cookies for this holiday.
24. A box of homemade cookies makes a ______ gift.
28. To add a chocolate flavor, you use cocoa ______ baking chocolate.
29. The abbreviation for year is ______.
31. A green vegetable which grows in pods is ______.
32. In this type of cookie, stiff dough is shaped with your fingers.
34. Finnish cakes are called finska ______.
36. You should allow 5 centimeters (______ inches) between drop cookies.
38. A rolling ______ is used when making rolled cookies.
42. This is a common shape for cutting Christmas sugar cookies.
44. This type of cookie is made from a soft dough baked in a pan with sides.
48. A nickname for mother is ______.

Crossword Puzzle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SNAPS
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WAFER
RAISINS
MACAROONS
BROWN
NOT
MOLASSES
ORANGE
M
PRESSED
REFRIGERATOR
PEPPARKAKAR
LEBKUCHEN
MOLDED
STATOR

[illegible] in QUAN[illegible] [illegible], [illegible], [illegible] Books International, Inc., Boston, Massachusetts, [illegible], pp. 6[illegible] and [illegible].

How to Clean Range Ovens

When	How	Use
Daily	1. Allow oven to cool	
	2. Remove shelf	
	3. Scrape burned particles from hearth	Long handled metal scraper
	4. Brush out interior, shelf ledges, and door crevice	Long handled brush
	5. Replace shelf	
	6. Wash outside of door and frame	Cloth wrung out in hot machine detergent solution
	7. Rinse and wipe dry	Clean hot water, clean dry cloth
Weekly	1. Allow oven to cool	
	2. Remove shelf, take to pot and-pan sink, and scrub	Hot machine detergent solution, gong brush metal sponge
	3. Rinse and wipe dry	Clean hot water Clean dry cloth
	4. Scrape burned-on particles from hearth	Long handled metal scraper
	5. Brush interior, shelf ledges and door crevices	Dust pan
	6. Scrub interior, shelf ledges inside and outside of door, and frame	Hot machine detergent solution, long handled brush
	7. Rinse inside and outside of oven	Clean hot water, clean damp cloth
	8. Replace clean shelf	
	9. Wipe outside dry and polish metal trim	Clean dry cloth Metal polish

How to Clean Food Mixer

When	How	Use
After each use	1. Turn off machine	
	2. Remove bowl and beaters, take to pot-and-pan sink for cleaning	Hot machine detergent solution, short handled gong brush
	3. Rinse, keep immersed for 1 minute, air dry	Clean hot running water 170 - 180 F
Daily	4. Scrub machine (a) Beater shaft (b) Bowl saddle (c) Shell and base	Hot machine detergent solution, gong brush, clean cloth
	5. Rinse	Clean damp cloth wrung out in clean hot water
	6. Dry	
	7. Oil as per directions if required	Machine Oil

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 5: Cakes

Module 5--Desserts: The Happy Ending

I. Instructor preparation for class activities

A. Have available the following ingredients:
- Cake mixes (2 boxes, 5# each--chocolate, plain)
- Cocoa
- Vanilla
- Flour
- Eggs
- Shortening
- Sugar
- Baking Powder and Soda
- Buttermilk
- Milk
- Powdered Sugar
- Fruit for cobbler cake
- Salt

B. Assemble the following equipment:
- Mixer
- 2" cake pans and cupcake pans
- Measuring cups and spoons
- Scale and spatulas
- Oven
- Knives to cut cakes
- Plates for sampling
- Forks for sampling

C. Duplicate sufficient copies of these handouts:
1. Cake Variations
2. Baking Butter Cakes
3. Cobbler Cake
4. Characteristics of High Quality Cakes
5. Scorecard for Shortened Cakes
6. Poor Characteristics of Butter Cakes and Why
7. Various Ways to Cut Cakes
8. Freezing and Thawing Baked Products

Lesson 5: Cakes

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
I. Types of cakes A. Butter cake; Layer, sheet and loaf B. Chiffon; has characteristics of butter cake and angelfood C. Angelfood D. Sponge E. Upsidedown	Discuss examples of types of cake, examining methods and recipes in Food For Fifty beginning on P. 157.
II. Variations of plain cakes, spice cakes and chocolate cake--Handout #1	Students add to list of variations during discussion.
III. Methods of preparation for butter cakes	See table 1.22--Temperatures and Times Used in Baking--Food for Fifty page 72.
A. Conventional Method Fat and sugar are creamed 10 minutes, then eggs are added and mixed 5 minutes. Dry ingredients are added alternately with milk, starting and ending with dry ingredients. A conventional cake batter is so thick that it does not spread by itself in pans, but must be spread with a spatula.	See Banana cake--Food for Fifty p. 167.
B. Modified Conventional Method Similar to conventional method, except that stiffly beaten egg whites are folded in last.	See German Sweet Chocolate Cake, p. 170 and Pineapple Cashew Cake, p. 171.
C. Dough batter Method Also called blended method in which cake flour, baking powder and fat are creamed; sugar and ½ milk are then added, and lastly, in about three parts; the eggs and remaining milk and flavoring. This method was designed for quantity equipment.	See white cake--Food for Fifty, p. 166 and plain cake, 164.
D. Muffin Method-- A quick method. Blend all liquid ingredients including oil or liquified shortening into the dry ingredients. This cake does not keep well.	

FOOD SERVICE EMPLOYEES SHORT COURSES

Lesson 5: Cakes

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
IV. Ingredients A. Pastry and cake flours have much less gluten than bread flour, and are made from soft wheat. 1 pound cornstarch added to 10 pounds all-purpose flour may be used as a substitute for cake flour. B. Fat--helps incorporate air when sugar is creamed in. Makes product tender, adds richness, and texture. C. Sugar adds sweetness and also tenderizes, gives color, texture and moistness. Also used for frostings. D. Milk--aids in browning, adds nutrients. E. Eggs--Add structure, tenderness, volume, nutritional value, flavor, color and moisture. F. Leavening--Sulphate-phosphate baking powder (double acting) requires heat for full carbon dioxide production. Other agents are steam and baking soda.	Note: Throughout this lesson, instructor may wish to decrease amount of sugar by 25% and to experiment with using part whole-wheat flour in some recipes
V. Baking Butter Cakes--Handout #2	Discuss Handout #2
VI. Preparation of Cakes Scaling: 12-14 oz. in 8" layers 6-7 lbs. in 1" x 18" x 26" bun pan ---- in 12" x 20" pan	Assign groups to prepare: Fudge cake--p. 169--(Conventional Method) Make 2-2 layer cakes and 20 cupcakes Plain cake--p. 164. (Dough-batter or blended method) (Optional--make part of it spice cake and part marble cake) Chocolate cake using recipe on cake mix box.
VII. Cake Mixes A. List ways to improve cakes made from cake mixes B. Discuss master cake mix recipe--Food for 50, p. 162-163	
VIII. Cobbler cakes--See cobbler cake Basic Directions and Variations--Handout #3 Combination of dry cake mix and fruit with sauce to make a "cake-desert."	Prepare one of the variations of cobbler cake with sauce.

FOOD SERVICE EMP EES SHORT COURSES

Lesson 5: Cakes

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
IX. Frostings: A. Types 1. Boiled	
2. Creamy 3. Glaze 4. Ornamented	Prepare creamy icing page 180 and use to ice the fudge cakes. Chocolate Butter cream page 180--use to ice plain cake and chocolate cake made from mix.
X. Discuss characteristics of high quality butter cakes--Handout #4	Handout #4
XI. Evaluate cakes and cobbler cake using scorecard for shortened cakes-- Handout #6--Poor Characteristics and Here's Why	Handout #5--Betty Crocker Score card for Cakes With Shortening.
XII. Demonstrate methods of cutting cake A. Different sizes and shapes B. Calculate number of servings using each method	See Handout #7--Various Ways to Cut Cakes
XIII. Calculate cost per serving Compare cost and quality of cake made from scratch versus cake made from mix. Discuss.	
XIV. Discuss freezing of baked product	Handout #8--Freezing and Thawing Baked Products

CAKE VARIATIONS

Some Variations of Plain Cakes

- Banana
- Lazy Daisy
- Caramel
- Cherry
- Lemon
- Chocolate Chip
- Gumdrop
- Peanut Butter
- Lady Baltimore
- Maple Flavored
- Peppermint

See also pages 164-165, Food for Fifty

Some Variations of Spice Cakes

- Applesauce
- Apple Butter
- Raw Apple Spice
- Chocolate Spice
- Date or Raisin Spice
- Prune Spice

Some Variations of Chocolate Cake

- Banana Chocolate
- Coconut Chocolate
- Cinnamon Chocolate
- Rocky Road Chocolate
- German Chocolate

BAKING BUTTER CAKES

A. Pans:
To make cakes successfully the pan must be the right size for the batter. A pan of proper depth supports a cake while rising and protects it while baking. Use shiny metal pans. Evenly grease the pans with solid shortening, not butter, margarine or oil, and lightly flour. To ensure a tender cake, push the batter gently from the mixing bowl into the pans. Spread the batter evenly from the center to the sides. Pans should be between 1/2 to 2/3 full.

B. Oven:
Oven must be preheated. Arrange cake pans alternately on the oven rack so that there is a space around each pan and a distance of approximately two inches from the sides of the oven.

Opening oven doors during the baking process is likely to lessen the volume of the cake and prevent even browning.

C. Doneness:
When done, all cakes should be delicately brown and shrink slightly from the sides of the pan. As further tests, the cake should spring back when it is touched lightly, and a toothpick or metal cake tester inserted in the center should be free from crumb particles when removed.

Overbaking destroys flavor and shrinks a cake. The finished product should be light with a fine texture, have a slightly rounded top, a tender grain, and a sweet well-flavored taste.

D. Cooling:
The cake should cool 10 minutes with the pan placed on a wire rack. To transfer cake to rack, loosen the edges with a spatula, place the rack over the pan, and invert.

COBBLER CAKE

Cobbler Cake Basic Directions

5 lb. box cake mix
1-2 lbs. fruit*
3 lbs. (6 cups) water

(1) Spread half dry cake mix over bottom of 18" x 12" x 2" steam tablepan.
(2) Sprinkle 2 cups water evenly over dry mix.
(3) Cover with desired fruit.
(4) Spread balance of dry cake mix over fruit.
(5) Sprinkle the remaining four cups of water evenly over the dry mix.
(6) Allow to set 5-10 minutes and place in 350°F. oven.
(7) Bake for approximately one hour or until center is set.

Yields 50 servings. Serve warm or cold.

*Drain juice from canned fruits. Juice can be used for sauce for this "cake-dessert."

Basic Ingredients for Cobbler Cake Sauce

2 lbs. (1 qt.) water and/or fruit juice
1 lb. granulated sugar
Juice and rind of 1 lemon
1½ ozs. Cornstarch
Coloring if desired

Variations of Cobbler Cake Sauce

Lemon Sauce: Add juice and rind of 2 lemons
Orange Sauce: Add juice and rind of 2 oranges
Chocolate Flavored Sauce: Add 2 ozs. of cocoa with the sugar
Strawberry Sauce: Add 1 cup strawberries and a few drops of red coloring
Cherry Sauce: Add 1 cup canned cherries and use cherry juice for part of liquid
Caramel Sauce: Use brown sugar instead of granulated; add vanilla extract in place of the lemon
Maraschino Cherry Sauce: Use maraschino juice for part of liquid and add a drop of almond extract

SCORECARD FOR SHORTENED CAKES

Select the appropriate words to describe the product. Use a scale from 1 to 5, 5 being high, 1 being low.

Cake	Form	Method	General Appearance : size and shape	Texture and Tenderness of crumb	Flavor and Mouth Feel
Fudge	2-layer	Conventional			
Fudge	cupcakes	Conventional			
Plain	sheet	Dough-batter			
Chocolate	12 x 20 pan	Cake mix			
Cobbler cake with sauce	12 x 20	Cake mix			
Creamy icing					
butter cream					

Characteristics of High Quality Butter Type Cakes

Appearance: Top crust should be lightly rounded toward the center of the layer; top crust should be pale, golden brown. Color should be characteristic of kind of cake and uniform throughout.

Texture: Uniform distribution of small gas holes; cell walls should be quite thin.

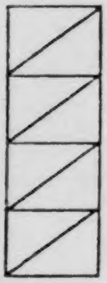
Tenderness: Crumb should be so tender as to "melt in the mouth" when bitten; there should be practically no resistance when bitten.

Mouth Feel: Crumb should feel "velvety" or extremely smooth as it comes into contact with the palate and the back of the mouth; crumb should be slightly moist, crumbly, sticky or doughy.

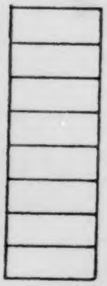
Flavor: Mild sweet flavor will predominate; if butter is used, butter flavor may be apparent.

Poor Characteristics of Butter Cakes	Here's Why
Peaked or cracked	Too much flour; too hot oven.
Pale color	Too little sugar; wrong type pan, underbaked.
Too dark brown	Too much sugar; too hot oven; overbaked.
Low volume	Too much shortening; too much liquid; too low oven; wrong-sized pan.
Sunken	Too little liquid; too much sugar or shortening or leavening; underbaked.
Large uneven cells, thick cell walls	Too little liquid; insufficient mixing; too much shortening; too cool oven.
Compact texture	Overbeating.
Crumble when cut	Too much shortening; too much sugar; insufficient mixing.
Tunnels	Too much egg; too little sugar; poor mixing; too hot oven.
Dry	Too little sugar; too much leavening; too long baking.
Soggy	Underbaking; too much shortening; undermixing.
Solid	Too much liquid; too much shortening; too much flour.
Tough	Overmixing; overbaking; too little shortening.
Dull color	Poor ingredients; improper mixing of ingredients.
Flat	Too little salt.
Unpleasant flavor; bitter	Strong or rancid shortening; poor quality eggs or flavoring.

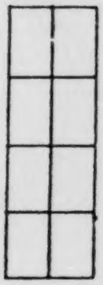
VARIOUS WAYS TO CUT CAKES



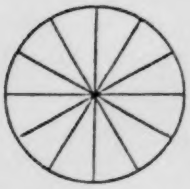
1 pound loaf cake
Yield: 8 servings



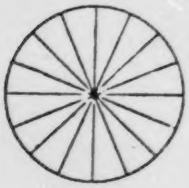
1 pound loaf cake
Yield: 8 servings



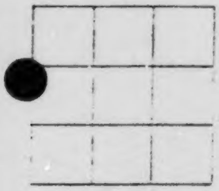
1 pound loaf cake
Yield: 8 servings



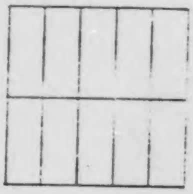
8" — 2 layer cake
Yield: 12 servings



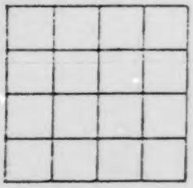
9" — 2 layer cake
Yield: 16 servings



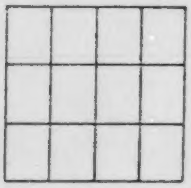
8" x 8"
Yield: 9 servings



8" x 8"
Yield: 10 servings

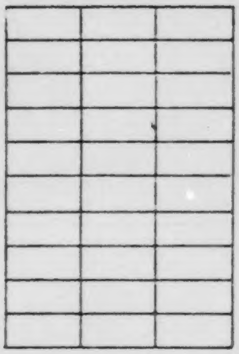


9" x 9"
Yield: 16 servings

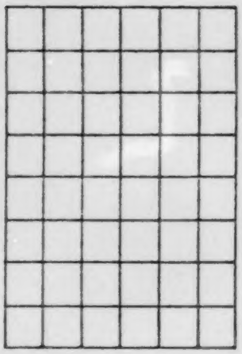


9" x 9"
Yield: 12 servings

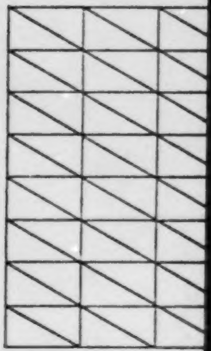
(Courtesy American Baking Institute)



9" x 13"
Yield: 30 servings



18" x 25"
Yield: 48 servings



18" x 25"
Yield: 48 servings

FREEZING AND THAWING BAKED PRODUCTS IN HOME FREEZERS

- Breads, cakes and cookies may be baked and frozen in the home, but to do it successfully care must be taken to follow recommended procedures.
- Commercially baked products are frozen more rapidly than those in home freezers. Air blast cooling as low as 50° F. is used by industry. Home freezers are not as efficient, therefore products tend to dry out more readily.
- A general rule for the length of time baked products are held in home freezers is "The Shorter the Storage Time, the Better the Quality of Product."
- Baked products do not improve with storage. They will never be of better quality than on baking day.

Freezing

- Wrapping or packaging baked products in moisture vapor proof papers or plastic bags is important. Press out as much air as possible before sealing package.

Breads

Cool. Wrap in foil, freezer paper or place in plastic bags. Label.

Cakes (Unfrosted)

Cool or chill cake to firm it. Place cake on foil covered cardboard. A collar of cardboard or stiff paper can encircle the cake. It should be a bit wider and deeper than the cake to prevent wrapping from touching crust. If cake is to be carried from the home later it may be wise to place wrapped cake in a box after it has been frozen.

Cakes (Frosted)

Powdered Sugar Frosting - which contains butter, margarine or other plastic fat is a frosting recommended for freezing.

Powdered Sugar Frosting Recipe

1 pound box powdered sugar, sifted
1/4 cup cream, milk or fruit juice
flavoring as desired
1/3 cup butter, margarine or other plastic fat
pinch of salt

Heat liquid and fat until steaming. Add flavoring. If desired cook over hot water for a few minutes to remove the uncooked taste.

Note: This should be enough frosting to cover 1-9" x 13" loaf cake or two 8" or 9" layers.

Seven Minute Frosting or other foamy types are not satisfactory because they become dry and brittle.

A frosted cake can be placed for about 30 minutes in the freezer to harden before packaging it. After it is frozen place it and the cardboard base into a plastic bag or cake box wrapped for freezer storage.

Thawing

- Thaw all baked products in their original unopened package at room temperature. This prevents moisture from the air condensing on the surface. This moisture will cause crust to become soggy or sticky.

Reproduced from: Morr, Mary L. and Theordore F. Irmiter, Introductory Foods, Third Edition, A Laboratory Manual of Food Preparation and Evaluation, MacMillan Publishing Co., Inc., U.S.A., 1980, Page 20.

Descriptive Terms Used in Judging Characteristics of Baked Products

Volume: The amount of a baked product produced from a specific amount of batter. Volume will be small (poor), average (good), large (excellent).

Appearance: The shape, condition of the top crust, and the color of the exterior surface (may at times include the color of interior crumb).

Shape: Symmetrical, unsymmetrical.

Condition of top crust: Level, sunken, rounded, erupted (volcano-like), pebbled, sticky, greasy, dry.

Exterior color: Pale, practically no browning, golden brown, light brown, dark brown, black (burned).

Interior color: May be affected by ingredients used, especially where egg is an ingredient.

***Texture:** The size of the air cell and thickness of the cell wall constitute the "grain" of the baked product. A product is heavy, compact, or light by characteristics of cell wall and air cell.

Air cell: Small, medium, large.

Cell wall: Thin, medium, thick.

Flakiness: The layering or development of "flakes" in the crumb of certain pastries.

Mealiness: Lack of flakiness: pastry is crumbly.

Velvetiness: Smoothness of crumb as it comes between palate and the back of the tongue. Lacking velvetiness, the crumb may be harsh and rough.

Moistness: The degree of moisture within the crumb. The crumb may be wet, soggy, gummy, pleasingly moist, dry.

Tenderness: The ease with which a product may be cut, broken, or chewed. Products may vary from very tough to extremely tender. Pastries may be designated as *brittle* and *hard.*

Flavor: Should be characteristic of product. Aroma becomes part of flavor as product is eaten. A partial list of terms to describe flavor may include: sweet, bitter, soapy, nutlike, floury, flat, rancid fat, wheat-like, eggy, yeasty, bland, sour.

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*Note: Many authors describe texture attributes of baked products in terms of "grain"; for example, a pound cake has a close grain.

Lesson 6: Dessert Specialties

Module 5--Desserts: The Happy Ending

I. Instructor preparation for class activities

A. Assemble the following equipment:
Pastry blender
Mixing bowls
Mixes
Measuring spoons and cups
Scale
2 cake pans 12 x 20 x 2
4 sheet pans
Oven
Dippers, #24 and #10
Pastry bag
Pastry tube large tip
5 pie pans
Plates

B. Have available the following ingredients:
Eggs
Salt
Cream of tartar
Sugar
Butter
Flour
Apples
Cake or bread crumbs
Brown sugar
Cinnamon
Nutmeg
Lemon juice
Rolled oats uncooked
Instant pudding prepared

C. Duplicate sufficient copies of these handouts:
1. Stages of Fresh Egg White Foam Formation
2. Score Card for Desserts
Short Course Evaluation

FOOD SERVICE EMPLOYEE SHORT COURSES

Lesson 6: Dessert Specialties

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
Introduction Review of first 5 lessons Review glossary	Discussion of how students have used information and skills used in this module.
Gluten Bread flour Hard-wheat flour Soft flour Cake flour Pastry flour Shortening Leavening Carbon dioxide Single-acting Double-acting Baking powder Butter cake Creaming method Blending method Muffin Method Conventional sponge method Panning Scaling Spread Meringue (soft) Meringue (hard) Crisp Shortcake Betty Cobbler Tartlets Mealy Flakiness Stretching Blistering Single crust Double crust	
I. Some dessert specialties are:	
A. A crisp is a fruit mixture topped with a belnd of flour, sugar, fat and seasoning and then baked. Oatmeal may be used for all or part of the flour to give a crisper and more nutty flavored top.	Discuss recipe and variations of fruit crisps. See apple crisp, Food for Fifty, page 381.
B. Bettys are layers of fruit alternated with bread or cake crumbs, sugar and butter or margarine and then baked.	Discuss recipe and variations of Brown Betty, Food for Fifty, page 380.
C. Cobblers are fruit with a baked biscuit or pie dough on top. Dumplings consist of fruit wrapped with pastry and baked with a spiced sugar syrup.	See recipe for apple dumplings, Food for Fifty, page 377.
D. Cream puffs and Eclairs are made from a cooked starch paste of flour, water and butter, with eggs beaten into the cooked mixture, which is then shaped and baked. They are leavened with steam.	Discuss recipe and variations of cream puffs and eclairs; see cream puffs, Food for Fifty, page 386.

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
E. Meringue shells are blends of whipped egg white foam and sugar. Pies are topped with soft meringues; hard meringues are the base for meringue shells, which are filled with whipped cream, fruit, or are used as the base for angel pie.	Discuss recipe and variations of meringue shells. See meringue shells, Food for Fifty, page 389.
Hard meringues have a larger proportion of sugar and are baked longer than soft meringues. See Handout #1	Discuss Handout #1--Stages of Fresh Egg White Foam Formation
II. Adjusting recipes To maintain control of quantities prepared and avoid waste, recipes should carefully be adjusted to the quantity needed.	Assign recipes to be prepared to students. Instructor will determine quantity to be prepared. Students will use direct reading table in Food for Fifty to adjust quantity.
Review principles of weighing and measuring.	See Food for Fifty, page 27--Table 13--Weights, Measures and Their Abreviations.
III. Preparation of fruit crisps, Bettys, cream puffs and meringue shells A. Demonstrate use of pastry bag and tube for shaping cream puffs, eclairs and meringue shells. B. Stress using principles of motion economy in portioning cream puffs and meringue shells.	Note: Instructor may wish to add sponge cake, angel food cake and apple dumplings to this lesson as a supplement to principles learned with meringue and pastry lessons
IV. Portion control Discuss size of portion appropriate for the clientel.	Demonstrate cutting 12 x 20 pan 6 x 8 for 2 x 2½ inch portions.
V. Merchandising desserts. Display. Serving Dishes. Garnishes. If possible, determine cost per serving.	

Lesson 6: Dessert Specialties

Module 5--Desserts: The Happy Ending

LESSON CONTENT	CLASS ACTIVITY AND EVALUATION
VI. Evaluation of finished products Discuss characteristics of high quality products.	Handout #2--Score Card for Desserts
VII. Storage of desserts A. Crisps and Bettys--Covered and refrigerated B. Cream puffs--Room temperature, and dry until filled. After filling put in refrigerator. C. Meringue shells--Store at room temperature, dry and fill just before serving.	
VIII. Evaluation of this module	Using evaluation form, students will evaluate this module.

RECIPE:

TIME:

TEMPERATURE:

NUMBER OF PORTIONS:

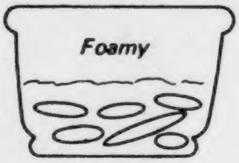
SIZE OF PORTION:

INGREDIENTS	AMOUNT			METHOD

Reproduced from: Morr, Mary L. and Irmiter, Theodore F.: Introductory Foods, Third Edition, Macmillan Publishing Co., Inc., U.S.A., 1980, p. 121.

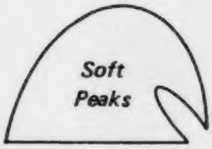
STAGES OF FRESH EGG WHITE FOAM FORMATION

1. **Foamy:**
   a. Bubbles form on the surface, but not all of the white is broken up.
   b. Foam is extremely unstable.
   c. Air cells are variable in size but are generally quite large.
   d. Mixture is still fluid.
   e. Mixture starts to become opalescent.



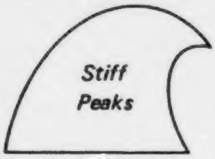
Acid, salt, and vanilla are added at this stage.

2. **Soft Peaks:**
   a. Air cells are medium fine; all of the white exists as foam.
   b. Foam is fairly stable; slight drainage upon short standing.
   c. Mixture is shiny; flows readily in bowl.
   d. Mass is elastic.
   e. Soft peaks fall over to near the base of the foam as beater is lifted from foam.



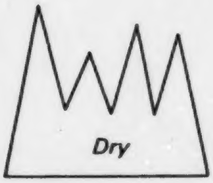
Sugar is added gradually but quickly (not in one large amount) at this stage.

3. **Stiff Peaks:**
   a. Air cells are fine, especially if acid has been added at the foamy stage; mixture is very white and opaque.
   b. Foam is quite stable (even of plain egg whites); some drainage will occur with prolonged standing.
   c. Mixture is shiny; flows slowly in bowl.
   d. Mass is still elastic.
   e. Peaks are still quite soft, but only the tip of the peak falls over as the beater is pulled from the foam.



Egg whites for souffles and omelets are beaten to this stage. Egg whites and sugar are beaten to this stage for angel cakes and pie meringues.

4. **Dry:**
   a. Air cells are very fine; mixture is extremely white.
   b. Foam is not stable; drainage occurs rapidly on standing.
   c. Mixture is dull; it has lost its ability to flow in the bowl.
   d. Mass is brittle and inelastic; peaks remain in rigid points.



This stage is generally to be avoided for products using fresh egg whites.
Reconstituted, dehydrated egg whites must be beaten to this stage for all products.

SCORE CARD FOR DESSERTS

Select and record words thet best describe the products. Evaluate against characteristics of a high quality product using a 5 point scale--5= most desirable, 1=least desirable.

Product	Appearance	Flavor	Mouth feel	Consistency
Fruit crisp				
Brown Betty				
Dumplings				
Cream puffs or Eclairs				
Meringue shell				
Angel food cake				

Characteristics of high quality crisps and Bettys:

Crisps and Bettys should be evenly mixed and evenly spread in pan. Layers of crumbs or toppings should be even and relatively thin. Topping should be crisp, not soggy; lightly browned, not pale or pasty. Flavor should be moderately sweet, characteristic of the fruit used, not too tart and not too greasy.

Characteristics of high quality cream puff shells:

Appearance: Top surface is irregular; top crust is golden brown; good volume

Texture: At least one large gas hole formed in the interior of the puff

Tenderness: Outer crust is tender, and crisp but firm, not soggy

Moistness: Outer crust is crisp; interior membranes may be slightly moist

Flavor: Outer crust should be bland; if butter is used, its flavor may be apparent.

Characteristics of high quality meringue shells:

Appearance: Evenly shaped, uniform in size

Color: Very pale and uniform, with no brown spots

Texture: Crisp and tender with no weeping

Flavor: Bland, somewhat sweet; not bitter

This is what I learned at this workshop:

This is how I'll use what I learned on my job:

Next Time, I hope you will:

(over for more space)